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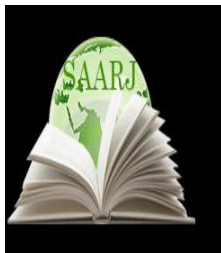
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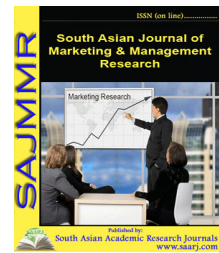
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The vision of the journals is to provide an academic platform to scholars all over the world to publish their novel, original, empirical and high quality research work. It propose to encourage research relating to latest trends and practices in international business, finance, banking, service marketing, human resource management, corporate governance, social responsibility and emerging paradigms in allied areas of management including social sciences , education and information & technology. It intends to reach the researcher's with plethora of knowledge to generate a pool of research content and propose problem solving models to address the current and emerging issues at the national and international level. Further, it aims to share and disseminate the empirical research findings with academia, industry, policy makers, and consultants with an approach to incorporate the research recommendations for the benefit of one and all.



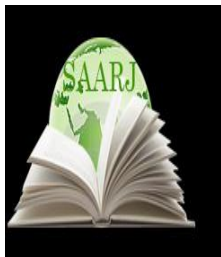
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(Double Blind Refereed & Reviewed International Journal)



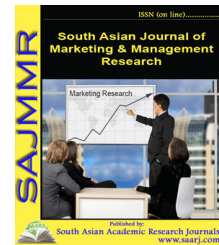
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## A STUDY OF DIGITAL DOCUMENTATION SYSTEM WORKING IN THE INSURANCE INDUSTRY

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### ABSTRACT

*“New Digital Technologies in the Insurance sector and the time is now”. At a time where speed of digital change is so rapid that standing still means falling further behind, this article provides fascinating insights into how insurers can respond to such splendid technological progress and how to succeed in the digital future. Though Insurers view digital as a key priority, they are lagging far behind. Because what the insurers fear is that the traditional documentation process was still reliable and more physical. Persons could be held accountable on the written document at hand. But adapting to a new digital platform presents many difficulties for insurers as they face challenges in introducing new channels to market, while simultaneously remodeling traditional ones. No single solution can seamlessly incorporate digital into a business; there are elements inborn to all effective digital approaches. Insurers need a vision that focuses on the basics. Embedding a culture of innovation into the organization and building a work frame, infrastructure etc. is the first step. Digital strategy begins with a plan and a sound understanding of the practical realities of implementation. Each of the elements like corporate strategies, customer expectations, targeted clients and hence on legalizing frameworks will help shape each other as digital capabilities develop.*

**KEYWORDS:** *Capabilities, Simultaneously, Implementation*

### INTRODUCTION

Documentation plays a major role in the Insurance sector, be it life insurance or general insurance. Based on documentation records, Wakeel (Urdu term)) means the company underwriting the policy and responsible for providing the cover and administering the policy in a Shari’ah compliant manner or the Insurance Company will grant the final claim if it fulfils all the requirements at the time of maturity. Therefore it is fundamental to have verified and authentic data declared in the form of initial documents.

Every individual/ Asset will have a different cover and an endorsement issued accordingly. This endorsement will differ based on different segments, age, health status, financial declarations, other insurance covers etc. People's lives in this century have become very busy and with the advent of rapid technologically they look for anything and everything they can easily procure, particularly with less efforts and hassle and most of them desire minimal or no paper work at all.

This paper focuses on an in-depth study on the Digital Documentation processes involved in the Insurance sector with special reference to FWU Global Takaful Solutions in collaboration with Dubai Islamic Insurance and Reinsurance Company. This study also analyzes the impact of offline and online processing of Insurance applications. It not only identifies the flaws with current documentation processes but also provides solutions to eliminate shortfalls encountered during online application processing.

### **BIRTH OF INSURANCE**

We cannot always prevent catastrophes from occurring. But we can take many constructive actions before problems occur that greatly reduce the damage they cause in our lives. We are already familiar with many of these actions, such as controlling our diet, exercising, wearing our seatbelt, driving a car with an airbag, and installing a home alarm system. And we are at least a little familiar with the system that allows us to share the impact of any losses we have with others, which is INSURANCE.

If risk is like playing with crackers that may spark a fire at any moment, then Insurance is our fire extinguisher. Insurance in today's world has become an integral part of major financial decisions and it offers essential financial protection for people who own a vehicle or a home, and also assists anyone financially in times losing a bread winner for the family.

The first methods of transferring or distributing risk were practiced by the Chinese and Babylonian traders as long ago as the 3rd and the 2nd millennia BC. In some sense we can say that insurance appears simultaneously with the evolution of human society (Muljadi, 2011, p-35). We know of two types of economies in human societies: natural or non-monetary economies (using barter and trade with no centralized or standardized set of financial instruments) and more modern monetary economies (with markets, currency, financial instruments and so on). The former is more primitive and the insurance in such economies entails agreements of mutual aid (ibid).

The first written insurance policy appeared in ancient times on a Babylonian obelisk monument with the code of King Hammurabi carved into it. The "Hammurabi Code" was one of the first forms of written laws. These ancient laws were extreme in most respects, but it offered basic insurance in that a debtor didn't have to pay back his loans if some personal catastrophe made it impossible (disability, death, flooding, etc.) (Beattie, 2010)

The Great fire of London which occurred in 1666 destroyed around 14,000 buildings. During that period London was still recovering from the plague which had ravaged it a year earlier, and many survivors found themselves without homes. As a response to the chaos and outrage that followed the burning of London, groups of underwriters who had dealt exclusively in marine insurance formed insurance companies that offered fire insurance (Ibid).

## MAIN FUNCTION OF THE INSURANCE

**(I) INSURANCE PROVIDES CERTAINTY:** Insurance provides certainty of payment at the uncertainty of loss.

**(II) INSURANCE PROVIDES PROTECTION:** The main function of the insurance is to offer protection against the plausible chances of loss. The insurance guarantees the payment of loss and thus protects the assured from sufferings.

(iii) Risk-Sharing

(iv) Prevention of loss

**(V) IT PROVIDES CAPITAL:** The insurance provides capital to the society. The accumulated funds are invested in productive channel.

**(VI) IT HELPS ECONOMIC PROGRESS:** The insurance by protecting the society from huge losses of damage, destruction and death.

## INSURANCE IN TODAY'S DIGITAL WORLD

Insurance in today's world faces a lot of conflicting challenges like continuing instability in financial markets, low interest rates, changing regulations, catastrophic losses etc. But the toughest challenge faced by the insurance sector is the one that is transforming consumer behavior and business models — digital technology.

According to E&Y Global Insurance Digital Survey which says “Digital is a new market force that is driving a massive change in consumer expectations and it requires a diverse set of skills, culture and measurement”. Industries such as telecommunications, consumer products, and media and entertainment have already harnessed digital technology to attract and retain new customers. It is time for insurers to evolve and respond: they cannot afford to be on the sidelines of the shift to digital (Handy and Crawford, 2013, p-1).

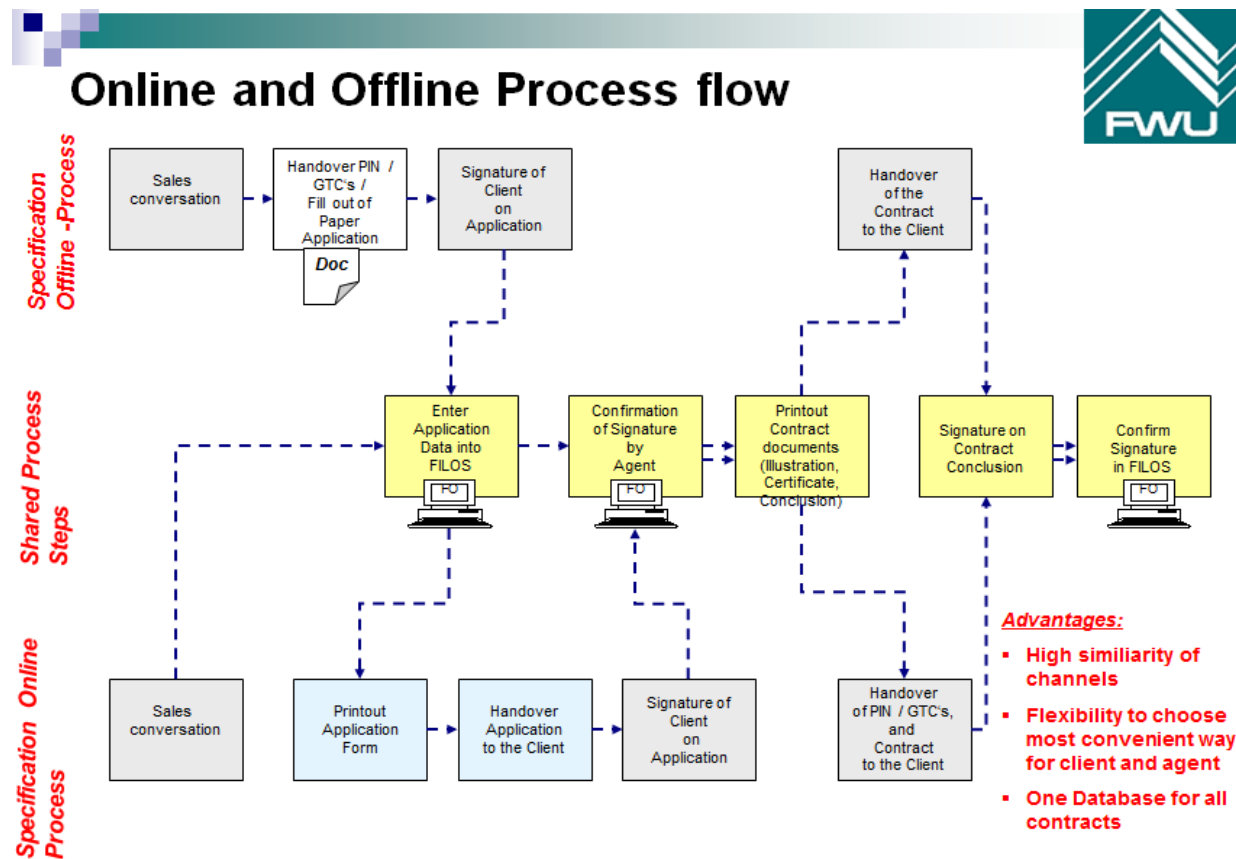
New digital technologies are irrevocably changing the way consumers engage and interact with insurers. Since traditional operating structures are getting disrupted it is time for insurers to re-evaluate their future direction and make the digital agenda a high priority. A life insurance policy is a long term contract. Documentation is therefore important.

In this article the authors have focused on the document processes adopted by Dubai Islamic Insurance and Reinsurance Company (AMAN) and simplified use of the online user friendly Advanced Technology Systems provided by FWU as compared to other major conventional insurances that still epoch back more on offline application processes.

By using FWU's ONLINE system 'FILOS' (Front Office Internet Based Life online System) which will grant each of our distributors (Banks) called rights for their bank listed employees unique User Identification to enter the applicant's data and issue an instant digital application. After analyzing the data, the smart software intellectually detects any previously entered applications of the applicant and cover is granted or rejected accordingly. The process continues with the print-out of the contract certificate and endorsement.

With ease and comfort, applications can be issued anytime, anywhere over a normal Desk computer, Laptop or I-pads. FWU system is extremely advanced, user friendly, effective and efficient. The access is given to Bank Operations, IT and Sales executives in order to allow enter applications maximum within 10 minutes and provide a cover for clients seeking Insurance. The

two main systems involved in this daily operations process are the BOS (Back Office System) and the FOS (Front Office System). Fig 1 shows the online and offline process flow of FWU system.



**FIG.1 SHOWS THE ONLINE AND OFFLINE PROCESS FLOW OF FWU SYSTEM ORGANIZATION PROFILE**

The FWU GROUP is a relatively younger corporate group. Formed in 1989 and on the market with its fund-linked life assurance since 1994, it is today one of the largest independent financial service providers operating internationally. The FWU GROUP offers its products at present in European (Germany, Austria, France, Italy, Luxembourg) as well as in non-European (United Arab Emirates, Saudi Arabia, Kuwait, Malaysia, Pakistan) markets. FWU Group offers its clients worldwide, asset management in line with managed investment strategies (Gomes, 2014, p-24)

The Vision of FWU Group is in the business of creating high performance investment concepts with broad and flexible applications for institutional investors, high net worth private clients as well as affluent customers and salaried individuals. The integration of quality service partners with international experience serves to support these ambitious design aims and opens up value-added potential for investors and distribution partners at both national and international level.

With its subsidiaries, licensed and associated partners, FWU AG belongs to the leading finance service providers with system solutions in the investment field in Germany. The main emphasis of the activities of the FWU Group has been the areas of design, administration and distribution of custom-made investment products, specialized in the field of unit-linked life insurance and



pension schemes. Here the enterprise is one of the forerunners of portfolio management solutions for the receivers of medium-sized and smaller incomes. For this target group, the attention has been focused on their need for security under preservation of the chances for profit (ibid, p-25).

Unlike most suppliers of unit-linked life insurances and pension schemes, the FWU Group offers perceivable advantages at conclusion of contract, due to the transparency of the design of the product, and the comprehensive information of the customer.

Since February 2006, the FWU Group in cooperation with the local insurance partner Dubai Islamic Insurance and Reinsurance Company (AMAN) are offering an Islamic life insurance. In the United Arab Emirates, the policy is being offered over the bank counters of the Abu Dhabi Commercial Bank (ADCB). It is a unit-linked life insurance, which takes the essential Islamic aspects of the community principle, the prohibition of interest and of bets, as well as a Sharia'h - conformed investment into account.

### **ANALYSIS AND INTERPRETATIONS**

Questionnaires were distributed to the clients, employees for acquiring information on public perception of natural hazards and risk mitigation – a review of current knowledge and practice. Questions were sequenced in a logical order and in order to achieve reliable and valid results, each question has been framed in a clear, precise and unambiguous manner to ensure each participant can interpret its meaning easily and accurately. The main sources of primary data were from the questionnaires and the secondary data were collected from various, operations manuals, and distribution agreements of FWU Takaful, e-books on insurance, textbooks, internet etc.

Fish Bone diagram and SWOT were used for the analysis.

**ANALYSIS:** Brainstorm potential causes for encountering problems at time of online application issuance process

Fig 2 identified 17 potential causes and reasons. Using Fishbone diagram (refer Fig 2) also indicates that the head of the fish defines the effect or main problem is notable errors encountered at the time of online application issuing process.

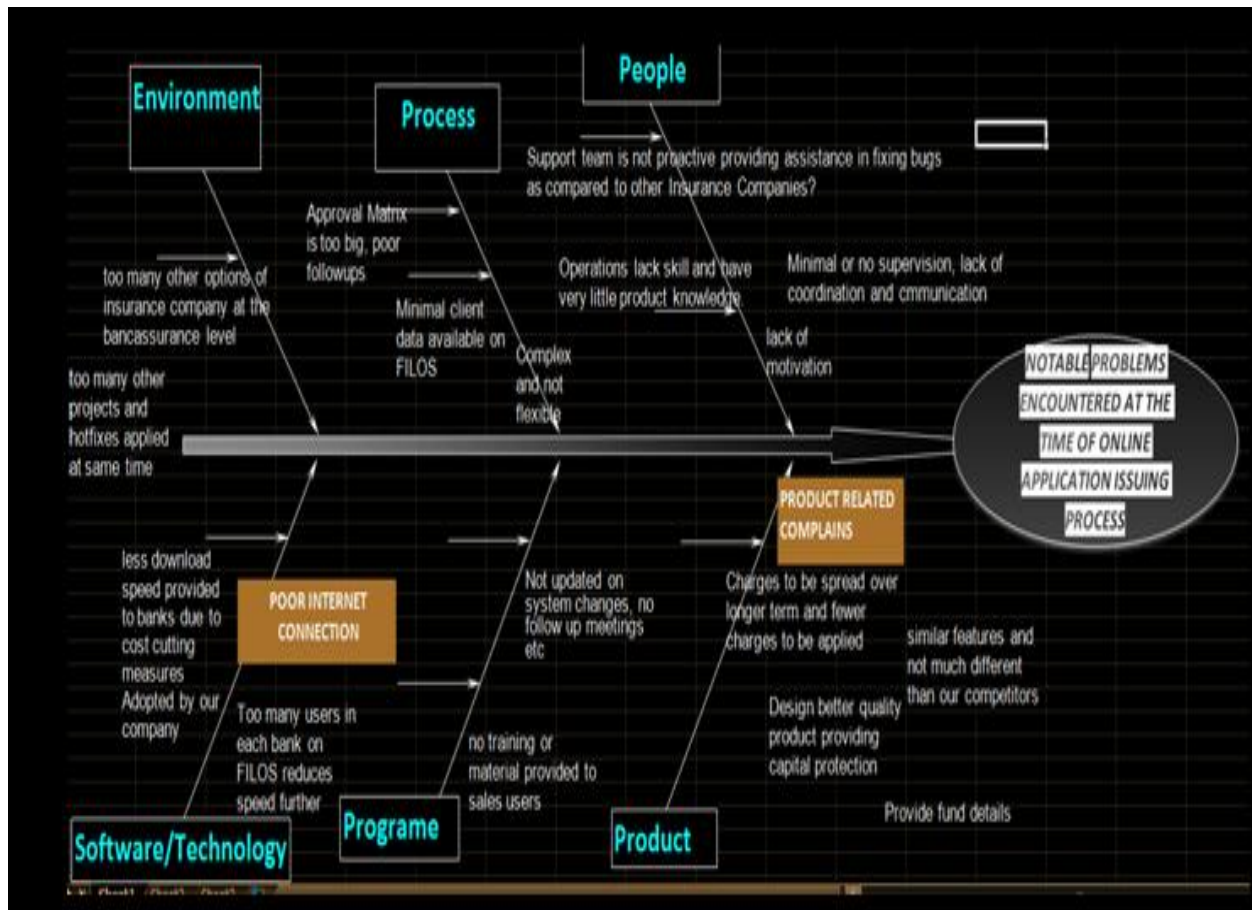


FIG .2 SHOWS THE MAIN PROBLEM

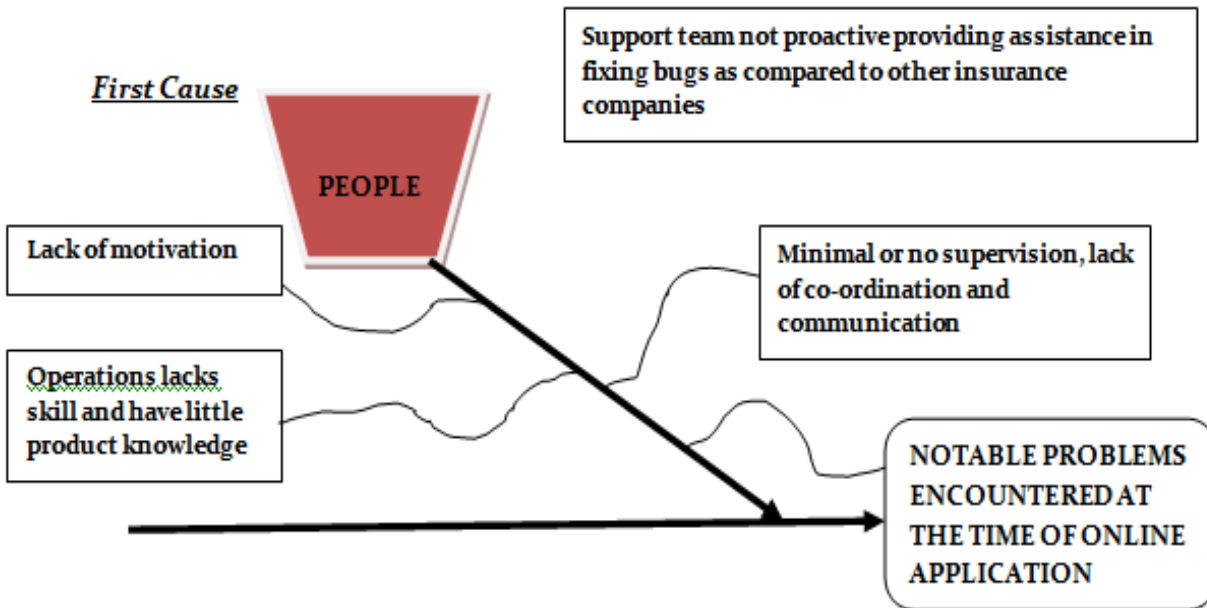
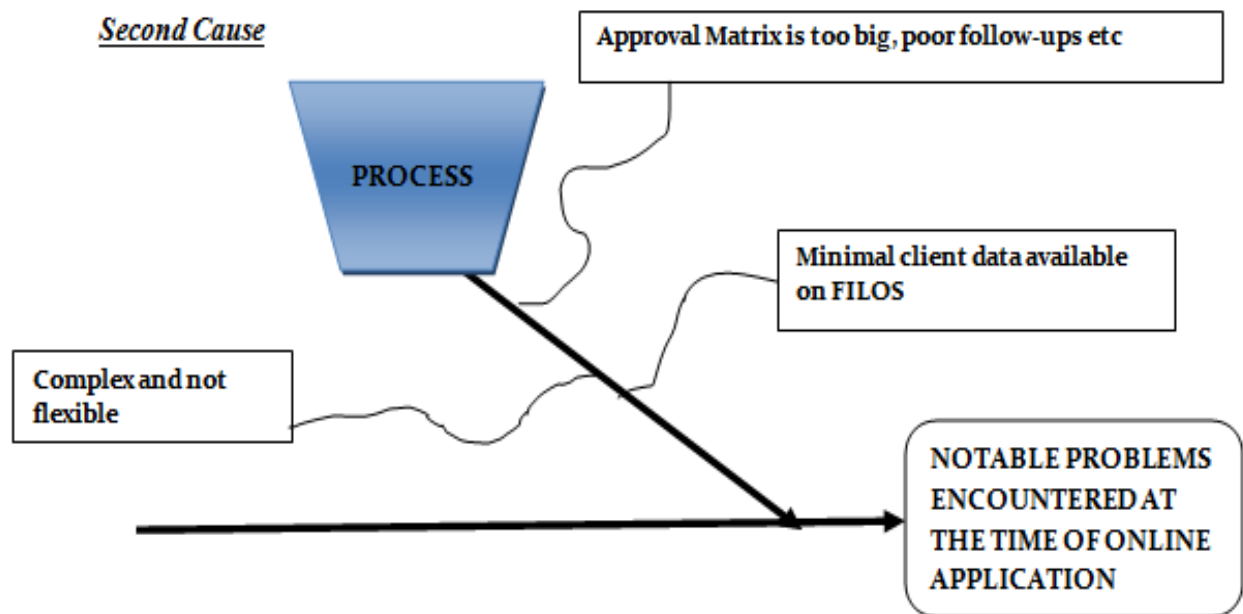


FIG.3 ILLUSTRATES THE FIRST CAUSE

Fig 3 is the first part of the fish bone we arrived. Here the first cause is the People. Here we notice that there is a lot of association for any situation as we know the effect is directly on the application issuing process.

The support team; (i.e), the IT, Operations and Sales are not quite supportive and effective in fixing error. The main reason being not enough trainings and timely meetings held. Even in the questionnaire distributors have mentioned that they are unaware of changes or updates of the system and of new product launches. As a consequence they are losing clients at the Banca takaful<sup>1</sup> counters. Sales operations do not have enough knowledge of the product nor have been given the complete rights on the system. The other problem noticed is that since organizational structure is not well defined, there is no proper work flow and responsibility matrix. Their regional office in Dubai is very small with only 23 employees. And since everyone functions independently, there is lack of communication and coordination which in-turn affects the entire process.

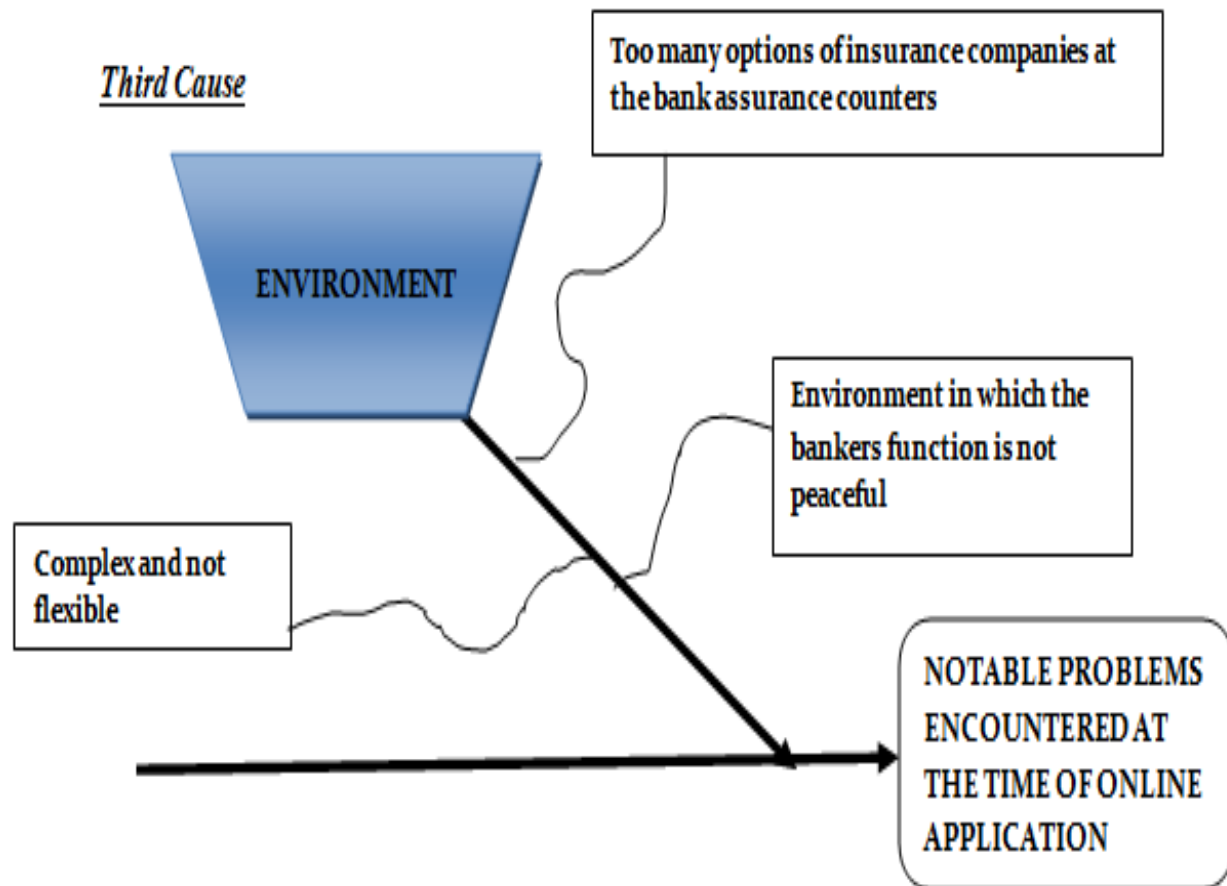
In the insurance sector it is mandatory to follow the approval matrix. There are various departments that need to be involved for any insurance, technical or business-side decision to be taken. One department or one person cannot decide. Therefore due to this process or procedure there are delays observed. If a request arises that a particular application was wrongly entered on the system, banks expect quick solutions to be provided. However, as of now it is not possible to provide a solution without having to check on the authentication of the request. If it's a big-ticket client, solutions need to be provided on an immediate basis. And for these reasons, the Operations, IT, Product or business team have to be readily accessible.



**FIG.4 ILLUSTRATES THE SECOND CAUSE**

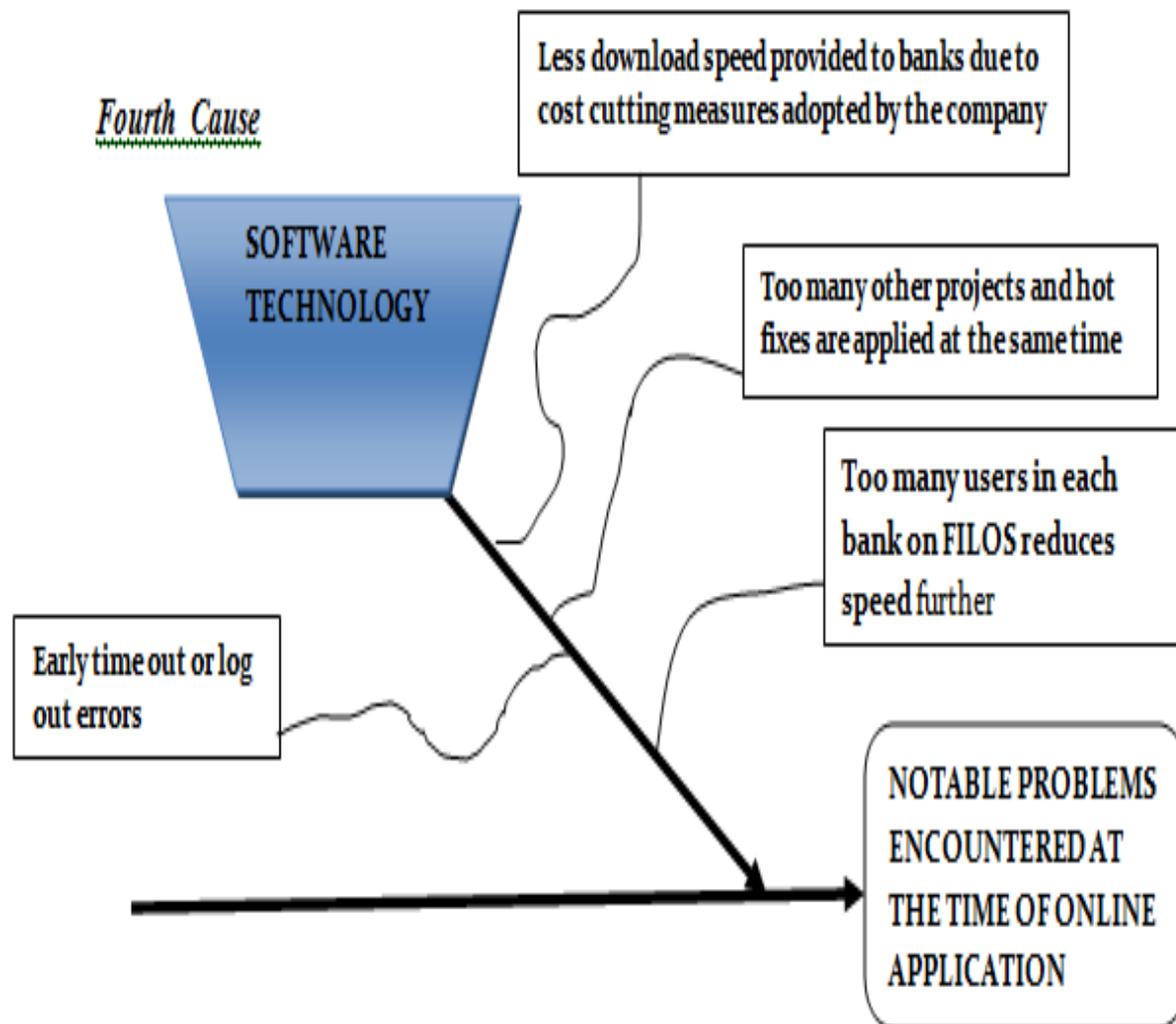
But due to work pressures or over-loaded requests, sometimes customers are lost. They will leave the bank counters disappointed and product name as a whole will be jeopardized.

Fig 4 demonstrates that minimal client data is available on the FILOS. This means not all bank sales or operations and in fact even the IT were not given the entire access right of the system. Yet again the policies have to be followed as to which concerned department has to be eligible for rights. From the questionnaires collected, it was also cited that this system was complex and was not flexible.



### FIG.5 ILLUSTRATES THE THIRD CAUSE

Fig 5 illustrates the third cause. People of different races, religions, nationalities will have their own freedom of choice. Muslims for that matter do not believe in something called 'Riba' or interest. And they believe in 'Tabarru' or an agreement for charity. Due to this reason the Dubai Islamic Product is more saleable in the Islamic market. When the questionnaire was circulated, it was observed that the insurance sector has grown so aggressive that there are a lot many competitors coming up and has started to sell their products also from the bank counters or banc takaful in UAE and abroad. Another notable observation is that the bank atmosphere towards sale was not ideal. For an individual the chaotic, noisy atmosphere can actually hamper the thought process and affect the entire process of issuing an application.



**FIG.6 ILLUSTRATES THE FOURTH CAUSE**

Fig. 6 depicts the fourth cause. Though technology has advanced and the company's product being sold via the most updated German online system, there were always some problems. Distributing the questionnaires to the bank distributors provided reasons for the frustration of the sales and operations personnel and it also gave insights why sales were affected. First reason was that they have a huge database in which early log outs timeouts and proxy errors were encountered. Since the portfolio was huge with around 5,000 plus active users registered, it not only further reduced the speed of issuing the application but also consumed more time for downloading, which indirectly added to the challenges faced by relationship managers and operations, IT workforce. The other main issue was that there were multiple projects on new bank launches and hot fixes done on the system which further impacted the speed and errors on the system.

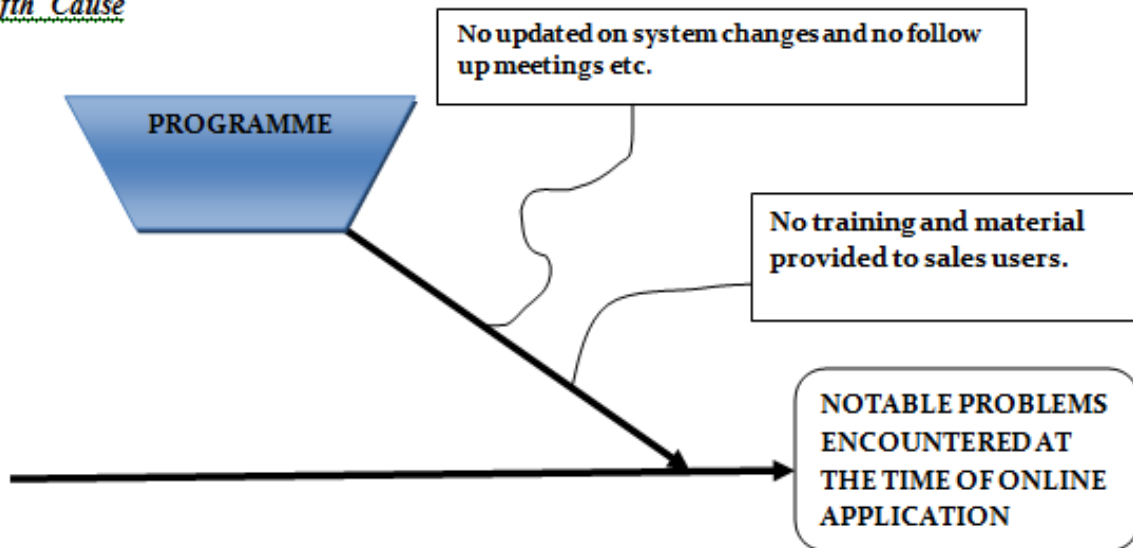
Fifth Cause**FIG.7 ILLUSTRATES THE FIFTH CAUSE**

Fig.7 shows the reason for the fifth cause which is the “programme”. The author truly believes that this was the main reason for this entire problem. Whenever there were new updates, only a few branches or the top performing banks were provided with new product meetings. No brochures, pamphlets were provided. No marketing materials were distributed. Above all there was no marketing executive working in the department. Follow up meetings were also missing.

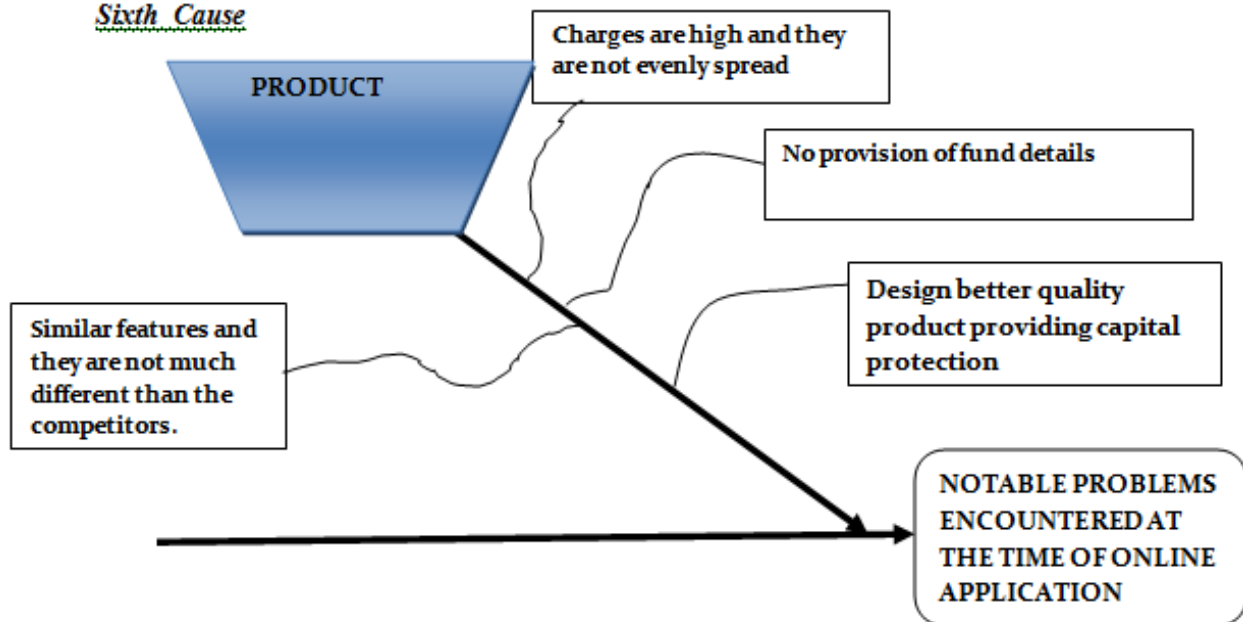
Sixth Cause**FIG.8 ILLUSTRATES THE SIXTH CAUSE**

Fig.8 demonstrates the sixth and the final cause which is the Product itself. There was no unique feature in the product and there was no difference when compared to the competitor’s product.

There were no underlying fund details which made the clients more suspicious as to where their investments were made. The returns were not quite appealing too and sometimes due to the recession-prone situations, clients sometimes lost heavily in their investable portion.

### SWOT ANALYSIS

<b>S</b>	<b>STRENGTHS</b>	<b>W</b>	<b>WEAKNESSES</b>
	<ul style="list-style-type: none"> <li>• Unique online application system the FILOS.</li> <li>• Strong distribution channels</li> <li>• Advanced technology used for application issuance.</li> <li>• Enhanced services provided to customers.</li> <li>• Strong database that helps identify errors immediately</li> <li>• Minimal hard copies as documents</li> <li>• Competing commission structure as compared to our competitors</li> <li>• Loyal clientele</li> </ul>		<ul style="list-style-type: none"> <li>• No marketing department</li> <li>• Recurring system errors. Weak internet connection, proxy errors etc.</li> <li>• No trainings or motivational programmes conducted for operations and sales.</li> <li>• Operations, IT support team should be more proactive</li> <li>• No Individual access provided for customers on FILOS.</li> </ul>
	<b>O</b>		<b>T</b>
	<ul style="list-style-type: none"> <li>• Partnership with brokers</li> <li>• Extend to more untouched aggressive countries like Egypt, Turkey and Indonesia</li> <li>• Loyalty programmes at time of recession providing extra benefits.</li> <li>• Reduce the fees. Higher commission structure for agents to encourage sell our product.</li> </ul>		<ul style="list-style-type: none"> <li>• Tough competition given by competitors both on system and business side.</li> <li>• More promising products with higher commission and incentive structure</li> </ul>

**FIG.9 SHOWS THE ANALYSIS BY SWOT ANALYSIS**

In Fig. 9 there was a check on how FWU can work with the SWOT analysis to identify their key strengths and their shortcomings.

In the above analysis we have noticed that distributors or the banks are complaining that they are facing too many errors with the system leading to loss of credibility and potential clients. To rectify this upgrading the existing system and rechecking the entire database are utmost important. As we go with the updates backups should be done at all FWU, AMAN and the Reinsurer Level. And the distributors or the banks users should be given back their user Identifications. (IDs)

This is to help at the time of application issuing and securing a potential client. With this sort of back-up user IDs actually stand out in favor of the client and the banker. Even when they could encounter system log out error, early time-out errors, and clients can be obliged to admire FWU's smart client management techniques. If it is not possible to provide the entire branch users with a backup user ID, then at least a master access for log outs with the branch manager should be given. And instead of incurring huge costs on new products, which at times fail, it gives a smarter approach to have a back up user ID and to upgrade the current proxy setup.

Other recommendations are to have one dedicated sales to a bank. Currently one relationship manager caters to 4 or more banks, which is quite challenging. Similarly one dedicated operations officers should be given to cater and to respond to distributor queries. Management is the highest level of deciding authority for any major changes to be brought about.

Considering all of the above mentioned problems, there should be a Research and Development team that goes to extents in finding out more about the competitor techniques, improvising on their own and so on. Innovative ideas should be encouraged from the company employees themselves.

Targeting the untouched market is now going to be the next venture. Highly versatile markets like, Egypt, Indonesia, turkey, India, Africa should be considered in the bucket list. Having a system with an outstanding product and by adopting the above strategies they can conquer the entire insurance market.

## CONCLUSION

Based on all of the research analysis tools, short interviews and the questionnaire, it can be concluded that banks are encountering a lot of systems problems which are highly overlooked by FWU. It is high time to update the systems and cater to the distributors needs.

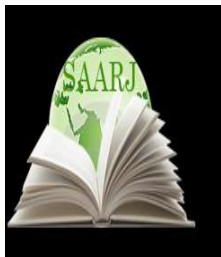
There is a positive impact of issuing online applications with fewer errors. No extra work force and costs are required. It involves less paper work, stress and cost reduction, and therefore it can be concluded to adapt to online issuing of applications. Giving extra benefits to clients in the form of a bunch of sms, free postal services, email notifications, e-greetings, vouchers etc are quite noted and will prove successful overtime.

The rewards will be huge to those that 'crack the nut'. Although smaller Insurance companies and new competitors may be more agile, established insurers may be better placed to bear the capital costs of experimentation. Digital capability is vital to be a booming insurance company, now and in the future. Of course, it is not a panacea and not without intricacies, from the need for flawless integration with offline channels, to the necessity of motivating employees behind new ways of doing things. But, in tandem with other channels, digital is indispensable to deliver a satisfying customer experience — and future business growth.

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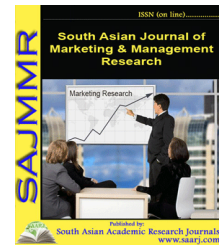
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# South Asian Journal of Marketing & Management Research (SAJMMR)

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## UZBEKISTAN'S PRACTICE ON DEVELOPMENT OF ENTREPRENEURSHIP BETWEEN YOUTH

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### ABSTRACT

*This article provides practical assistance in supporting the implementation of business initiatives, startups and projects of young people in the Republic of Uzbekistan, training the unemployed in specialties and business skills that are in high demand in the labor market, as well as current issues and their solutions reflected. In addition, the priorities of the State Strategy aimed at improving the living standards of the younger generation were studied.*

**KEYWORDS:** *Youth, Entrepreneur, Business Skills, Business Initiative, Startup, Business Plan, Loan, Collateral, Interest Rate, Tax Burden*

### INTRODUCTION

The wide range of long-term strategic tasks, such as ensuring the well-being of the population, increasing international competitiveness and joining the ranks of innovative advanced countries, while maintaining systemic economic, social and educational problems, the successful implementation of state youth policy has become one of the important conditions for sustainable and rapid development.

Indeed, the year 2018 of the President of the Republic of Uzbekistan

Decree PF-5466 of 27 June on the state program "Youth is our future" states that "to increase the socio-economic activity of young people, their broad involvement in entrepreneurship, the

implementation of promising ideas and projects of young entrepreneurs, as well as systemic problems that hinder employment ... persist. ... Targeted programs for the integrated development of youth entrepreneurship and the active involvement of young people in entrepreneurship are not being implemented on the ground and the necessary infrastructure is not created, which is the most important condition for the creation of new jobs "[2].

### **Research methods**

The methods of scientific abstraction, expert evaluation, induction and deduction, comparison, statistical grouping were used in the analysis.

### **Analysis of the relevant literature**

Theoretical approaches to the role of small business and entrepreneurship in the economy began to be developed in the 1900s. Nobel laureate in economics J. Shumpeter considered small firms as a structure that brings together innovations and changes in the economy. However, by the mid-1940s, J. Schumpeter had changed his mind, noting the need to recognize that the most powerful "engine" for economic development were large companies [5. - 526 p.].

However, the crisis caused by the disproportions between supply and demand reduced the impact of the "volume effect" of large companies in the 1970s, and the share of the small business sector in the economy, which was able to adapt quickly to consumer demand and conditions, increased sharply.

The research conducted by V. Coen, R. Levin, D. Moveri showed that the size of the firm had a very small, statistically insignificant effect on the intensity of scientific research; that business units and firms can interpret less than one percent of the variation in size and intensity of research and development; indicates that more than half of the variable changes in this indicator are provided by the network efficiency [6].

Well-known American scientist D. Byorch in his scientific work "The process of job creation" noted that the bulk of new jobs in the United States are created in the small business sector. Based on the Dun and Bradstreet credit rating database, the following conclusions were drawn by the scientist:

1. Almost 60 percent of jobs in the United States are created by firms with 20 or fewer employees, while the share of large companies (with more than 500 employees) does not exceed 15 percent;
2. After more than 4 years of the company's establishment and operation in the market, its job creation opportunities have sharply decreased.

A study by U.S. scientists Armington and Odel found that the share of small business in job creation in the U.S. economy is small - nearly 38 percent of all jobs are created by companies with 100 or fewer employees. Although D. Byorch, Armington, and Odl use the same type of database, the two different results are explained by the difference between the methods used in data processing and analysis.

The results obtained by D. Byorch and, in some respects, by Armington and Odl, American scientists J. Medof, Ch. Brown, J. Hamilton, British scientist D. Story [5. - 22,79,84 p.], Helsinki Technological University staff E. Autio, P. Arrenius and H. Vallenius, Swedish scientists D. Henrekson and M. Johanson [7,8] did not find evidence.

According to D. Storin, the role of small business in job creation is strongly differentiated in terms of time and space; fast-growing small businesses (their share in the total number of small companies) play a key role in job creation

Not more than 1 percent); the large number of bankruptcy cases in small businesses limits the ability to determine the actual situation in the creation of jobs [5].

### **Analysis and results**

The Republic of Uzbekistan adopts many normative and legal acts on the development of entrepreneurial activity among young people. These documents are aimed at demonstrating the intellectual and creative potential of young people, increasing their civic responsibility and involvement in ongoing reforms, as well as their broad involvement in entrepreneurial activities, the implementation of promising ideas and projects of young entrepreneurs and youth employment.

In accordance with the tasks set out in the Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021, small business, family entrepreneurship, empowerment for women, comprehensive support of youth entrepreneurship, creation of additional jobs through active involvement of youth in business and youth specific measures have been identified to ensure employment. In particular, the Decree of the President of the Republic of Uzbekistan dated November 17, 2017 No. PF-5242 "On measures for further development of handicrafts and comprehensive support of craftsmen" and Decree PF-5466 of June 27, 2018 "On the State Program" Youth - Our Future ",No. PQ-3680 of April 26, 2018 "On additional measures to improve the activities of farmers, dehqan farms and landowners", PQ-3777 "On the implementation of the program" Every family is an entrepreneur "dated June 7, 2018, PQ-3856 of July 14, 2018 "On measures to improve and increase the efficiency of work to ensure employment" and Resolution No. PQ-4231 of March 7, 2019 "On additional measures for the broad involvement of the population in entrepreneurship and the development of family business in the regions" strengthened the legal framework for activities in this area. As part of them, state programs have also been developed.

It should be noted that the development of small business, family entrepreneurship, employment, increasing the effectiveness of the system of financial support for programs for women and the younger generation, as well as radically improving the working methods of state-owned commercial banks and increasing the popularity of banking services. plays a key role in establishing full partnerships with broad strata, small businesses and family businesses. Resolution of the President of the Republic of Uzbekistan dated October 24, 2019 No PP-4498 "On additional measures to improve the procedure for lending to projects implemented under state programs for the development of family business" provides for this purpose.

According to this resolution, from January 1, 2020:

Lending of projects under state programs was carried out through JSC "People's Bank", JSCB "Microcreditbank" and JSCB "Agrobank" at the refinancing rate of the Central Bank of the Republic of Uzbekistan;

State Fund for Employment Promotion under the Ministry of Employment and Labor Relations of the Republic of Uzbekistan, Territorial Funds for Creating New Jobs under the Council of Ministers of the Republic of Karakalpakstan, regional and Tashkent city khokimiyats, Public Fund for Women and Family Support, Youth Union of Uzbekistan - Our Future "Fund, the Fund

for Support of Farmers, Dehkan Farms and Landowners under the Council of Farmers, Dehkan Farms and Landowners of Uzbekistan and other funds for small business, family business development, employment, women's and youth initiatives. compensation and subsidies were allowed to cover interest expenses on loans issued by authorized banks;

The Fund for Reconstruction and Development of the Republic of Uzbekistan, which allocates resources for program financing, and the part of the Fund's resources to be repaid in 2020-2022 are sent to the authorized banks on a monthly basis to finance projects under the program, At the same time, the interest rate on resources was set at 4% lower than the refinancing rate of the Central Bank of the Republic of Uzbekistan.

Financing of projects implemented under the Decree of the President of the Republic of Uzbekistan dated June 27, 2018 No PF-5466 "On the State Program" Youth is our future "and in order to ensure the financial stability of banks at the expense of the Fund for Reconstruction and Development of the Republic of Uzbekistan, the authorized capital of JSC "People's Bank" is 250 billion soums, the authorized capital of JSCB "Microcreditbank" 170 bln. soums and the authorized capital of JSCB "Agrobank" was increased by 290 billion soums.

**TABLE 1 TARGET PARAMETERS FOR FINANCING PROJECTS UNDER GOVERNMENT PROGRAMS IN 2020 FROM CENTRALIZED RESOURCES (IN BILLIONS OF SOUMS)**

No_	Social applications	Funds to be directed in 2020	Including:		
			due to repayment of previously issued loans	At the expense of the state budget	Uzbekistan Recovery and at the expense of the Development Fund
<b>Total</b>		<b>3 982,1</b>	<b>2 940,8</b>	<b>971,3</b>	<b>470,0</b>
1.	"Every family is an entrepreneur" program	2 418,0	2 418,0		
2.	"Farmers, dehkan farms and Support for Landowners" program	75,4	75,4		
3.	Crafts Development Program	589,3	119,3		470 (\$ 50 million)
4.	Programs of funds under local governments	26,1	26,1		
5.	"Employment Promotion" program	313,6	38,1	375,5	
6.	Women and Family Support Program	161,2	72,4	188,8	
7.	The program "Youth is our future"	398,5	191,5	407,0	

According to Table 1, in 2020, 3,892.1 billion soums will be allocated to finance projects under government programs. UZS is planned to be allocated. Of this amount, 2,940.8 billion. if the sum is allocated at the expense of repayment of previously issued loans, 971.3 billion soums to the state budget and 470.0 bln. UZS will be allocated from the Fund for Reconstruction and Development of Uzbekistan.

In the context of the current coronavirus pandemic in the world and the intensification of the global crisis, the Fund for Entrepreneurship Support has further expanded its assistance to support entrepreneurship in Uzbekistan. In particular:

- 12% of expenses are reimbursed when the loan rate is up to 28% (currently 8% when the interest rate is up to 24%);
- The fund will provide an additional 400 billion soums to cover the interest on loans worth 3 trillion soums. directs the sum;
- Restrictions on guaranteeing only one project of a young entrepreneur will be lifted;
- For entrepreneurs with a positive credit history, the fund guarantees 75% of the loan (today - 50%). The upper limit of the guarantee amount is 8 billion soums to 10 billion soums.
- In addition, in order to provide comprehensive support to businesses, the following measures are planned to be implemented:
  - From April 1 to October 1, 2020, the monthly minimum amount of social tax for individual entrepreneurs was reduced to 50% of the basic calculation amount;
  - Until January 1, 2021, the tax audit of business entities has been suspended;
  - The social tax rate for small businesses and farms was reduced from 12% to 1% in May-July 2020. As a result, more than 260,000 businesses and farms will save a total of 650 billion soums. Through this they will be able to use them as capital and working capital;
  - Small businesses, sole proprietors are exempt from land and property taxes for the next three months. As a result, more than 50,000 businesses have invested \$ 300 billion. soums will be saved and working capital will increase;
- 500 billion soums to entrepreneurs to replenish working capital. soums (previously up to 10 billion soums), the amount of compensation for loans was increased from 5% to 10%.

## CONCLUSIONS AND SUGGESTIONS

Despite the fact that the application of strict quarantine measures against the coronavirus pandemic has had a serious negative impact on economic growth, sufficient work is being done in our country to ensure the employment of young people, to direct them to entrepreneurial activities through the formation of entrepreneurial skills.

However, changes in the socio-economic situation require scientific research on the orientation of young people to entrepreneurship and the continuous improvement of the theoretical and methodological basis for the formation of relevant skills in them. In our opinion, the following features should be taken into account in scientific research:

**First**, within the current conditions of economic development and its development strategy, the mechanisms of organizing the activities of business entities, directing them to innovative areas and government support should be considered as a separate object of scientific research. Research in this area will allow to determine the medium and long-term forecast of youth

entrepreneurship. The results of the study will also play an important role in the development of programs to increase the role of youth entrepreneurship in the economy of the country and its individual regions;

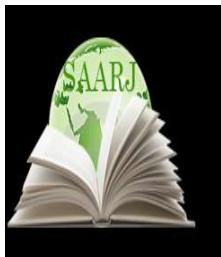
**secondly**, the analysis of issues of youth entrepreneurship development and decisions made in this direction should be systemic. Ignoring systemic features poses many problems theoretically, methodologically, and practically. Therefore, it is expedient to include such disciplines as systems theory, methods of systematic analysis in the curriculum of training, retraining and advanced training of young entrepreneurs;

**thirdly**, one of the priority issues in ensuring the compatibility between the elements of endogenous and exogenous environment of youth entrepreneurship is not only the object of scientific research, but also the organization and conduct of practical activities. In this way, it is possible to overcome many problems in the internal and external environment of business entities;

**fourth**, the development of international cooperation should ensure the implementation of the tasks set out in the Innovation Development Strategy through the widest possible use of the technological potential of business incubators established in developed countries in the implementation of business projects. It should be noted that the theoretical and methodological developments in assessing the role and importance of international cooperation in the development of youth entrepreneurship should serve to solve purely practical problems.

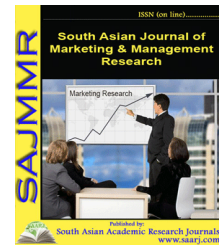
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# South Asian Journal of Marketing & Management Research (SAJMMR)

(Double Blind Refereed & Reviewed International Journal)



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## INVESTMENT IN THE TOURISM SECTOR: THE PANDEMIC AND ITS IMPACT

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### ABSTRACT

*In the context of the current pandemic, the development of the tourism business has fallen almost to the bottom. Moreover, this direction suffers the greatest losses from coronavirus. The article presents the dynamics of changes in investment in tourist facilities, as well as on the basis of comparative analysis, the most attractive areas of tourism for investment are identified. The problems of the tourism sector that arose as a result of the negative impact of the coronavirus are identified, and the main directions for the development of attracting investment in the tourism sector in the current situation are proposed.*

**KEYWORDS:** *Tourism Destinations, Global Foreign Direct Investment, Risks Of Investing In Tourism, UNCTAD's "Menu Of Actions"*

### INTRODUCTION

Tourism is developing dynamically, showing not only high growth rates but also the desire for deep qualitative transformations. Currently, attracting investment in the tourism sector is a matter of its survival. Understanding the logic of investment processes determines the adequacy of practical investment decisions made at various stages of the investment process. One of the most important and responsible stages of this process is the choice of the enterprise in which investment resources will be invested. The choice of an investment object is mainly influenced by such a category as the investment attractiveness of the enterprise.

Attracting the necessary amount of investment to the economy is a priority task for both the Republic of Uzbekistan as a whole and for each region separately. To date, the development of Uzbekistan's tourism potential can be called the most priority direction for increasing its investment attractiveness.

This is primarily due to the fact that the region has a high tourist and recreational potential, rich history, great attractions, and its mineral resource base is very rich and diverse.

It should also be noted that foreign investment (as well as domestic) can cause growth not only in the tourism industry but also in related industries due to the multiplier effect. Foreign investment is the basis for the “new” development of the national economy: a new type of labor force is formed in the importing country; workers adapt to new working conditions; new jobs are created; the share of employment due to foreign investment reaches a significant amount [9].

The tourism industry consists of many interconnected infrastructure elements. First of all, we are talking about:

- about hotels, hotels, hostels, holiday homes, resorts and other places where tourists stay;
- restaurants, cafes, bars, eateries and other public catering places;
- resort and wellness complexes;
- transport, communications and Internet services;
- zoos, sports grounds, amusement parks, and other entertainment industry facilities;
- financial and organizational services;
- rental and rental of vehicles;
- and many other things.

Naturally, the creation of a full-fledged resort is often impossible without the active participation and financial assistance of the state. However, if we consider each element separately, it turns out that its creation is possible with private investment by companies and even individual investors.

Currently, in Uzbekistan, investment in the tourism sector can be carried out mainly at the expense of the investor's funds. In this case, the risks of losing invested capital will be much higher. But the potential return on such investments will be measured in much larger numbers.

### **LITERATURE REVIEW ON THE TOPIC**

To date, there is no single concept in foreign literature for any host country that allows assessing the effect of foreign investment. However, the main positive trend of the influence of foreign capital on the national economy is noted: it contributes to the economic growth of the country, which is expressed in the activation of the national capital, strengthening investment processes, as well as the formation of new trends in the development of the national economy.

According to S. Ten in the field of tourism, investment means the use of financial resources in the form of long-term capital investments (for more than one year), both within the country and abroad, to obtain the desired amount of profit from the invested funds. [2]

Investments become such if there are a demand and supply for investments, the interests of sellers and buyers, as well as other participants in the investment process coincide, that is, there is a balance of interests. If these conditions are met, investments in the tourism sector will be



profitable for both business participants related to tourism (hotels, restaurants, travel companies) and tourists [3].

The entire investment process is important from the beginning to the end: preliminary analysis of the investment project, its monitoring and correction in the course of implementation, its completion [4].

In our opinion, the role of investment in the tourism industry is to create a new image of any state that attracts foreign investment, thereby solving the socio-economic problems of the country.

### **Data source and research methodology**

Analysis and synthesis, scientific abstraction deduction, classification, generalization, comparative, theoretical interpretation, and analytical methods were used in the methodology of this article, as a result of the bibliographic study, the direct and indirect factors affecting them and the prospects for further development were identified.

The information used in the article is mainly obtained through two sources: the official web pages of the State Committee of the Republic of Uzbekistan for Tourism development and UNWTO.

### **Analysis and results**

Available data points to a double-digit decrease of 22% in Q1 2020, with arrivals in March down by 57%. This translates into a loss of 67 million international arrivals and about USD 80 billion in export revenues from international tourism.

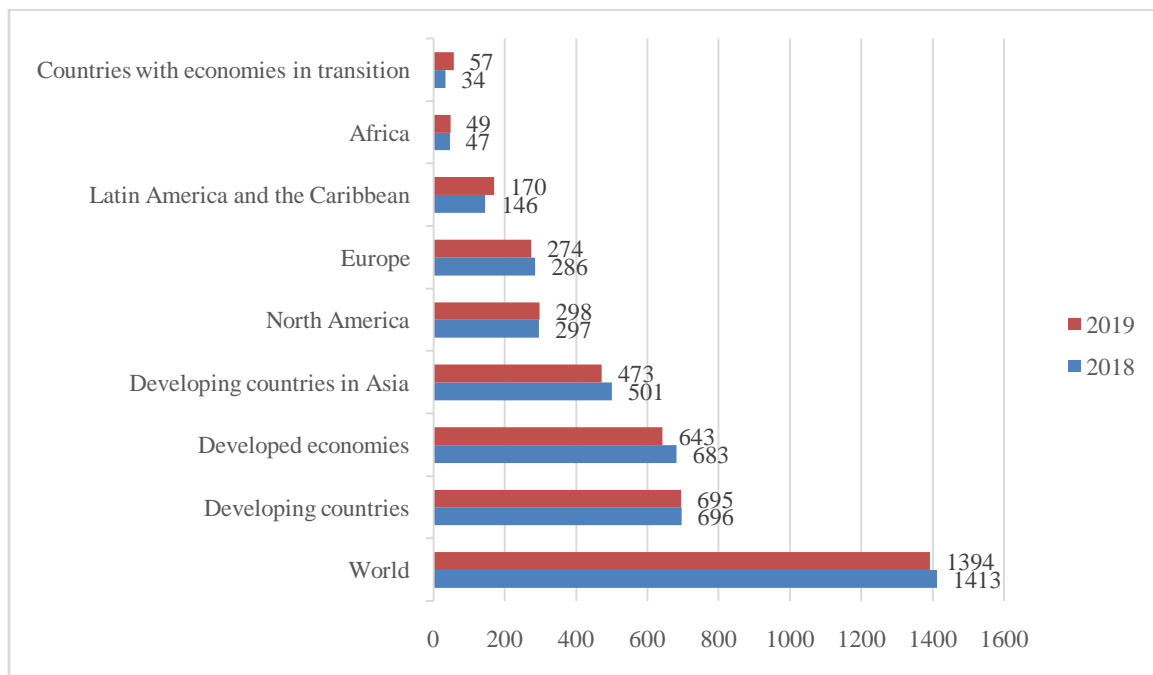
By regions, Asia and the Pacific, the first region to suffer the impact of COVID-19, saw a 35% decrease in arrivals in Q1 2020. The second-hardest hit was Europe with a 19% decline, followed by the Americas (-15%), Africa (-12%) and the Middle East (-11%).

Current scenarios for the year point to declines of 58% to 78% in international tourist arrivals in 2020, depending on the speed of the containment, the duration of travel restrictions and the re-opening of national borders, although the outlook remains highly uncertain.

This would translate into a drop of 850 million to 1.1 billion international arrivals and a loss of US\$ 860 billion to US\$ 1.2 trillion in export revenues from tourism, the largest declines in the historical series.

The plunge in international travel puts 100 to 120 million direct tourism jobs at risk.<sup>1</sup>

The global investment process is experiencing a downturn due to the outbreak of corona virus infection. Trends in global foreign direct investment (GFDI) have already shown significant declines over the past few years. So, in 2019, the volume of GFDI amounted to \$1.39 trillion, which is \$20 billion less than the previous year and 27% lower than in 2016. In 2019, GFDI flows declined in Europe and developing Asia, remained unchanged in North America, and increased in Africa, Latin America and the Caribbean, and countries with economies in transition.



**Figure 1. FDI inflows by region, US \$ billion<sup>2</sup>**

Figure 1 shows the total volume of attracted investments by region of the world over the past two years. This year, according to forecasts of international organizations, a sharp decline in investment in almost all sectors of the economy is expected. This is primarily due to investors' fear of the negative effect of the corona virus pandemic.

According to UNCTAD estimates, the pandemic situation could lead to a further drop in the GFDI from -30% to -40% in 2020-2021. Such expectations are similar to the estimates of the OECD, which forecasts a reduction in GFDI flows by more than 30% in 2020, under the most optimistic scenario.

To this day, many countries around the world are taking measures to support investment and protect important sectors of the economy in times of crisis. In particular, support measures include speeding up investment approval procedures, improving online tools and various electronic platforms, investment promotion services provided by specially created agencies, incentive schemes for R & d in the health sector, state acquisition of shares in key domestic enterprises, government loans and guarantees for domestic suppliers in value chains.

We should pay tribute to the foreign investment of Uzbek tourism, however, it should be emphasized that foreign investment should be correlated with the level of domestic investment. If this condition is met, foreign investment has a stimulating effect on the development of tourism. World experience shows that the volume of foreign direct investment rarely exceeds 12-15 % of the total investment in the national economy.

Even though investment activity in the field of tourism is one of the main sources of its financing, at the same time, the features of a comprehensive assessment of investment in tourism enterprises as a whole, as a single socio-economic system, have not been studied. At the same time, tourism (its infrastructure), is an important factor in the development of civilization, which unites States and continents, needs sound, professional and effective investment management.

Knowledge of modern methods of economic assessment of the chosen solutions, taking into account the peculiarities of the functioning and development of tourism enterprises, is necessary to develop a proper investment policy in this area.

The reasons for the need for investment may be different. They are divided mainly into three types:

- updating the existing material and technical base (introduction of modern reservation systems or improvement of equipment in rooms (air conditioning, plumbing, etc.) to improve the class of service in hotels and restaurants);
- increasing the volume of sales and services in tourism;
- development of new types of activities (entering the market of the tourist industry with a new tourist product or a new type of service). [5]

The currently prevailing mainly commercial approach to investment activity dictates to reconsider the view of investment and the investment process in tourism, going beyond the economic and commercial assessment of the costs and results of the investment. In sources that have officially recommended methods for calculating investment indicators, including for budget investments, costs and results are calculated and measured according to a single financial criterion. Other indicators are recommended either for economic characteristics or if they are not measurable in market categories, leave them in restrictions (for example, environmental and social indicators). Indicators that are not measured by market methods can be targeted, but in this case investment projects are selected from the options with the lowest cost indicators.

In the tourism sector, there may be other forms and methods of investment that cannot be reduced to commercial indicators of benefit. For example, how can you assess the effect of a talented artist who painted the facade of a building at their own expense, and young architects, for example, created an ice fairy-tale Palace of the Snow Queen, as a result of which they became the object of increased attention of tourists? How do I calculate such investments? It is necessary to conduct an in-depth analysis of the system “sources of investment - types of investment - methods of investment - results of investment”. Expanding the boundaries of the concept of investment in tourism will allow a different assessment of the investment climate in the region, making it objectively attractive, since the investor in the broad sense of the word is primarily a resident.

The new content of the investment process in tourism is as follows:

- first, the sphere of investment in tourism should include the external and internal territorial environment in which tourism develops;
- second, targeted investments should be directed at solving the problems arising from the goals of sustainable development of tourism in the region as a system of education. At the same time, special attention should be paid to the management of external relations, their activation, and search for sources of investment resources, both attracted from the outside and their own;
- third, given the high level of connectivity of elements of tourism as a system, investments should be comprehensive, not selective, and cover all life-supporting elements of tourism infrastructure (it is absurd, for example, to build a hotel on a free territory without providing it with engineering infrastructure);

- fourth, investment processes must be continuous due to objective and subjective factors, such as, for example, changes in the needs of tourists, the moral and physical deterioration of tourism infrastructure elements and the need for expanded tourism reproduction;
- fifth, the investment process must anticipate the needs of tourists, as well as the failure of any element of infrastructure that can disrupt the functioning of the entire system, which requires the creation of certain reserves;
- sixth, investments should be focused on those elements and their properties that give the greatest positive synergy effect and prevent the appearance of negative synergy.

Determining the amount of investment in tourism development is usually presented in the form of a project (investment or business plan), justifying a set of measures related to the implementation of investments in tourist activities, with subsequent reimbursement of costs and obtaining the expected amount of profit for the investor for the established (acceptable to the investor) period.

Structuring factors to influence the tourism business allows you to understand what makes up the investment policy in this area of activity. All factors that affect the investment activity of tourism enterprises can be differentiated into objective and subjective, external and internal. Objective factors do not depend on the activities of the state (government) and the tourist enterprise, for example, flooding, earthquake and other natural disasters.

### **Risks of investing in tourism**

The specific nature of risks in the tourism sector is that the inability to provide the declared services, and consequently, to receive income from them, is often associated with unforeseen circumstances and the inability to manage them, especially in Russia. These circumstances include:

- natural disasters (floods, earthquakes, volcanic eruptions, abnormal weather events, etc.), the consequences of which negatively affect the activity of tourists even after their consequences are eliminated;
- epidemics and declared quarantines;
- social upheavals (mass strikes, military actions, political upheavals), as well as manifestations of terrorism.

Another group of risks the profitability of tourist activity is the increased level of threat to people that are far away from their homes (diseases and food poisoning, accidents, loss of property conflicts with local laws due to lack of awareness about it, etc.). Compensation in such cases may affect the results of operations of tourist companies, both directly and indirectly, however, the risks of this group can be minimized by appropriate insurance and Contracting with a diversification of responsibility.

To avoid adverse consequences of the pandemic, UNCTAD has formulated a “menu of actions” for investment promotion and types of administrative assistance in times of crisis:

- Reduced processing time for investment applications and simplified tax procedures.
- Providing timely and appropriate administrative advice; informing applicants of the status of their applications.

- Promoting and developing institutional cooperation and coordination. Creating a single online approval body; clarifying roles and accountability between national and local authorities, where there are multiple responsible agencies.
- Minimizing the cost to investors during the investment approval process.
- Facilitating, within the framework of relevant legislation, the entry and stay of investment project personnel (facilitating the issuance of visas, removing bureaucratic obstacles).
- Simplify the process of connecting to the necessary infrastructure of public services.
- Conducting periodic reviews of investment procedures, ensuring their simplicity and transparency.
- Creation of mechanisms for the dissemination of good administrative practices in special economic zones, and the broader economy.

## CONCLUSION

In conclusion, we would like to note that the negative impact of coronavirus on the tourism potential of Uzbekistan cannot be overestimated: despite the positive trend in the past, the volume of foreign tourists will significantly decrease, and mass tourism events will lose popularity.

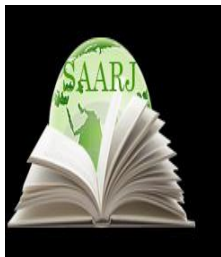
However, due to the unavailability of international tourism in the long term, domestic tourism may increase in popularity among the local population. In particular, this may apply to such areas as ecotourism and active tourism. That is why the development of these areas can be considered a priority. Besides, it should be noted that the tourism potential has an impact on the socio-economic state of Uzbekistan, which is why its development should be paid close attention.

Effective investments in tourism, regardless of their size and object of investment, are not only about increasing the income of investors and entrepreneurs. The growth of this industry contributes to filling the budget at all levels, increases employment and incomes of the population, and is one of the most effective solutions for the revival of depressed regions.

Thus, investment is a necessary factor in the development of the tourism industry, creating a modern competitive tourist complex that provides ample opportunities to meet the needs of Uzbek and foreign citizens in tourist services.

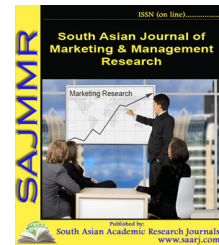
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# South Asian Journal of Marketing & Management Research (SAJMMR)

(Double Blind Refereed & Reviewed International Journal)



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## THE IMPROVEMENT FINANCING OF EDUCATION ON THE BASIS OF PUBLIC-PRIVATE PARTNERSHIP IN UZBEKISTAN

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Republic of UZBEKISTAN

### ABSTRACT

*The article substantiates the role of education, proposes and confirms the hypothesis about the importance and necessity of social partnerships for financing and development of education in knowledge- driven economy. To confirm the advanced hypotheses we studied the evolution of concepts of social interaction and social responsibility to justify patterns of social partnerships in the knowledge-driven economy that allowed us, using the model of "triple helix", to show the necessity of the collaboration of government, universities and corporations to advance on the path of innovative development. The article considers the application of concession as a form of public– private partnerships in education, which recently has found application in Uzbekistan. Based on studying world best practices, the authors propose to use the investment funds, in particular, the mechanism of impact investment in education as a promising technology.*

**KEYWORDS:** *Infrastructure, Education, Knowledge-Driven Economy, Social Partnerships, "Triple Helix" Model, Collaboration, Public–Private Partnerships, Concession, Grant, Endowment Fund, Mutual Funds, Impact Investment, Industrial Districts, Priority Development Area, Charity.*

### INTRODUCTION

An increase children of school age and a shift in the demand for quality education require a change in the budget for education. It is clear that at the international level, states makes various economic and political decisions on the development of the non-governmental education system. The main aim is not only to improve the quality of education, but also to increase its efficiency by maximizing the advantages of the models proposed by each sector on the basis of public-private partnership, increasing the participation of all sectors in improving the quality and quantity of education. At the same time, it is noteworthy that it identifies priorities for effective implementation of the quality of education on the basis of public-private partnership. Moreover, the use of household and private sector mobility play an important role in improving the quality

of public-private partnerships, financing education and expanding the diversification of educational services. Nowadays, the role of public-private partnership in improving the quality of education is growing in Central Asia and this is becoming a key priority.

Budgeting by the state was 90 percent in schools in Switzerland, Finland, the Slavic Republic and in some provinces of China in 2018, while in Slovenia, Belgium, Germany, Luxembourg and Ireland, the figure were 80 percent to 90 percent. However, in the United Kingdom, Greece, the United States, Mexico, Albania, Kyrgyzstan, Tunisia, Uruguay, the UAE, Qatar and Jordan, state budget expenditures are 1 percent or less. The figures are from 1 to 10 percent in New Zealand, Panama, Brazil, Kazakhstan and Peru.<sup>1</sup>

In the countries ranked high in the Global Competitiveness Index of the World Economic Forum, the level of education, the development and widespread use of information and computer technologies, as well as the widespread introduction of high-capacity industries contribute to high GDP per capita. It has a consequent dependence on the security and the right impact on the increase in living standards of the population.

In world practice, there are several mechanisms to attract private capital to the education system, including public-private partnerships, investment funds and grants. It is known that public-private partnership has proven to be an effective mechanism for attracting private capital for the implementation of projects in industry and social infrastructure. International experience in attracting private investment in infrastructure in countries with different levels of socio-economic development show that cooperation is applied successfully in transport and social infrastructure, housing and communal services and other areas (prison, defense and military). In countries with high levels of GDP per capita, the state has a high level of social protection, health and education in the areas of health and education.

Implementation projects through the public-private partnership model, the public sector transfers the performance of public functions to the private sector. The transfer of public functions to a private partner increase share of the private sector in intellectual, human and financial capital, which causes public service to be more efficient.

Permanent representative office of the Asian Development Bank (ADB) provides consulting services on public-private partnerships to assist in the construction and reconstruction of secondary schools in Sergeli district of Tashkent in Uzbekistan. It is known that a lot of works have been done to improve the quality of educational services and modernize the learning environment. At the same time, the private sector is carrying out extensive reforms to ensure the participation of the private sector in the construction and reconstruction of secondary schools, to attract additional investment and international experience to support the sector. In the process, model contracts have been signed with schools.

### **Analysis of the relevant literature**

In recent decades, the partnership between the private and public sectors in education sphere has been growing as public-private partnerships. Along with all the goals of education, the main criterion is to achieve sustainable economic growth.

According to A. Smith's research, the high share of private resources in public expenditures in improving the infrastructure of financial expenditures in Monheim (Germany) ensured the effectiveness of the mechanism of cooperation and public-private partnership rather than competition between the public and private sectors.<sup>2</sup>

According to Hodge's scientific-practical proposal, public-private partnerships in education includes the duration of the contract between the public and private sectors, the agreement on what part of production and services to develop, the distribution of rickshaws, the use of resources or the direction of education should be determined by the type.<sup>3</sup>

Day Ashley (2014) explored the impact of PPPs on students' future competitiveness in the labor market in the education system, and the importance of private sector PPP funding in education systems learned through charter schools, contract schools, vouchers, or similar programs.<sup>4</sup>

Below Patrinos et al. (2009) divided PPP into four main forms of education financing:<sup>5</sup>

1. Voucher system (Based on voucher payments. There are universal, geographical area-specific, group-specific voucher types. Private education with acquired voucher fee and parental surcharge ability to pay for educational services in the institution is coordinated). In these types of systems, homeowners can choose their children's school, i.e., one of the private or public schools and the state provides a subsidy to each teacher in the private schools. However, such vouchers can only be obtained by families who have access to such schools, which requires a high level of education by them.
2. Establishment of PPP through the transfer of public schools to private management. The system also includes charter schools (charter schools - schools that are fully funded by the state and operated by the private sector) and privileged schools.
3. Form of financing of private schools on the basis of state subsidies. This may include subsidies for teachers' salaries or textbook costs.
4. Establishment of PPP on the basis of Private Finance Initiative (PFI) that carried out activities related to the construction and maintenance of school infrastructure (excluding the educational process).

The establishment of PPPs in the education system provides a balance between quantity and quality in education, taking advantage of the public and private sectors. In addition, the establishment of PPP in the education system increases the motivation of teachers. It causes to bear competition between public and private schools. Increases the choice of parents and students and increases their focus on rankings in the educational process.

According to a study conducted by Patrinos, in assessing the effectiveness of PPP in the education system was assessed on four criteria, namely, the level of enrollment of children of school age, tests to determine the level of mastery of educational effectiveness, level of stratification (by gender, ability, teacher level, social status, etc.) and tuition fees. It does not create geographical and socio-economic inequalities and does not impair the overall quality of education. As a result, the population's demand for education is high.

In the future, the development of the PPP mechanism in the education system will increase the emergence of outsourcing models, voucher schools and charter schools in the services of educational and non-governmental educational institutions. A similar trend has been observed in world practice. Examples include the United States, the United Kingdom, and other developing countries.

In 2014, in more than 134 developing countries, PPP-based infrastructure financing averaged 10-15%. As of 2019, the countries of East Asia and the Pacific dominated the process, accounting for 40%, an increase of 14% compared to 2018 (an increase of 18% over the past 5 years).<sup>6</sup>



Models with such a structure are mutually compatible with the formation of infrastructure and construction systems, the scope of educational services and the type of funding sources differs from each other on basis of the provision of transport services, food, sanitation and textbooks and the terms of the contract.

According to risk analysis, the risk is divided equally between the public and private sectors. The state provides the private sector with the opportunity to earn income on the basis of long-term contracts. When analyzing the payment system and the amount of profit, private companies are based on the tendency of users to pay over the years and the payment is also guaranteed by the state or a combination of these. With such a structure, PPT-based education services are mainly specific to voucher and charter schools, including infrastructure, construction, school management, and various operational services.

In a number of high-income countries, there are private schools with a voucher structure. In 2008, the figure was 69 percent in the Netherlands, 54 percent in Belgium and 12 percent in Denmark. The chronological analysis of this practice has been formed and operated for more than 100 years and serves to expand the possibilities of competition and improve the quality of education on a competitive basis, to motivate the participants of education.

Features of the voucher structure include:

- Funding is based on a defined demand;
- The risk of termination is the same in all private schools if they do not recruit enough students;
- Emphasis is placed on socio-economic diversification of students as religious education is deepened in some schools;
- Parents have the opportunity to choose whether to send their children to public or private schools. In this case, education costs are provided in a public school on the basis of a voucher provided by the state budget, or it is given the opportunity to use educational services in a private school with additional funding from parents;
- Finance and supply are separate;
- Private schools operating on the basis of DXSH must meet state educational standards.

## **RESEARCH METHODOLOGY**

The research uses practical scientific and specialized research methods such as induction, deduction, comparison, quantitative and qualitative analysis. The database for this work includes the normative and legal acts of Uzbekistan regulating public-private partnerships, investment activities and the activities of investment funds. This article uses official statistics from the official websites of research agencies, institutes and other organizations.

### **Analysis and results.**

The number of schoolchildren increased by 39% (from 4.2 million to 5.8 million) from 2016 to 2018 in Uzbekistan. In 2019, the number reached to 6.2 million. The capacity of schools is for 4.8 million pupils. In order to further improve the learning environment for students, 65 new schools were built and it caused to create 15,636 additional places for schoolboys. In addition, over the past three years, more than 1.5 trillion soums have been spent on new construction, capital and overhaul of 1,691 educational institutions under the investment and state programs “Obod Qishloq” (“Obod Mahalla”). Under these programs, in 2018 alone, 24 new schools were

built and commissioned. As a result of the increase in the number of students and the improvement of conditions, 43 school branches were transformed into secondary schools. In addition, 1,815 schools were renovated and commissioned at the expense of the local budget. At the same time, in 2016-2018, the number of non-governmental educational institutions increased almost 4 times and reached 84. It should be noted that one of the priorities for 2019 is to double the number of non-governmental educational institutions on the basis of public-private partnership.<sup>7</sup>

In the development of non-governmental educational institutions, including the introduction of the practice of using public-private partnerships, public-private partnerships are to be established in schools with low enrollment and private investors provide free education to existing students. It is planned to use the existing experience in foreign countries, such as taking responsibility for education. At the same time, the private investor aims to increase investment flows to make more efficient use of building capacity and to expand the access of students in the micro-region, especially children from low-income families, to quality education at no extra cost. As a result, it is possible to divert budget expenditures to improve other public educational institutions, including schools and school branches in remote areas.

In addition, the organization of training centers in the form of public-private partnerships, the development of the educational process, the creation of state educational standards, textbooks and teaching aids increase the activity of economic contracts.

Ensuring effective collaboration between universities, local governments, and stakeholders based on the triple helix model at the local level, which is the basis for increasing the balance of economic and social change, further increase the effectiveness of educational services. Provides rapid circulation of information on consumer preferences, alternative technologies, new raw materials, components and semi-finished products, as well as new marketing, commercial and financial practices. It helps to turn the knowledge of each activity participant into the overall economic wealth of the region.

The practice of creating industrial zones can form effective forms of cooperation in education in Uzbekistan. At the same time, the industrial district management company performs tasks for the collection information on the needs of enterprises and organizations in the field for employees of various specialties and necessary qualifications and provides relevant information to education authorities. The company, together with district administrations and interested enterprises, places orders for the training of specialists in educational institutions. Assists in the placement of students in industrial work in enterprises and organizations in the industrial district, as well as assists in the employment of graduates of educational institutions.

Worldwide, enrollment in private primary schools increased by 58% between 1991 and 2004. This figure is almost 10% higher than in public schools. Public-private partnerships are widely used to build school infrastructure. Such cooperation is based on a contract, usually for a period of 25 to 30 years. In the education system, the results achieved on the basis of PPP contracts vary (Table 1).

**TABLE 1 THE ROLE OF PPP CONTRACTS IN ENSURING THE EFFECTIVENESS OF EDUCATION<sup>8</sup>**

<b>factors</b>	<b>Private school</b>	<b>Voucher</b>	<b>Subsidies</b>	<b>Level of private financing</b>
<b>Flexibility</b>	Significant	Average	Average	low
<b>Quality criteria</b>	Determined by contract	Dertermined by parents and pupils demand	Average, but importance of contract	low
<b>Risk distribution</b>	low	low	Average	Significant
<b>Competition</b>	low	Significant	low	low

There are four factors that influence the functioning of the PPP in the education system: flexibility, the fact that the contract includes quality criteria, the optimal risk distribution and the extent of competition. In the private management of schools, flexibility, quality criteria and high provider standards are important in ensuring success.

### CONCLUSIONS AND SUGGESTIONS

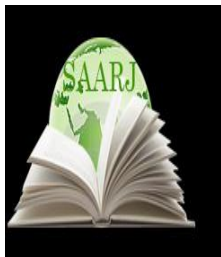
It is cost-effective to finance educational services on the basis of PPPs and to offer educational promotions and services to the private sector. The following should be done by the state to ensure the activity of educational services on the basis of PPP in the education system:

- gradual liberalization of the free price system for educational services to private schools;
- establishment of commercial and non-commercial private schools;
- further improvement of the system of incentives for attracting foreign direct investment in education;
- establish clear, objective and simplified criteria and processes for the establishment and registration of private schools;
- providing subsidies to the private school sector;
- ensuring the flexibility of contracts for PPP-based education services;
- establish educational services for PPP partners based on the principles of transparency, competitiveness and multi-level;
- control over the fulfillment of obligations and rights under the contract, the creation of a system for evaluating the results;
- quality of educational services in public and private educational institutions should be assessed on the basis of further modernization of reliable standards.

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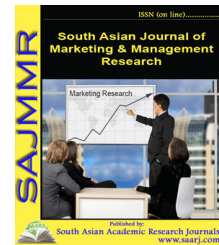
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## PORTFOLIO MANAGEMENT IN KARVY STOCK BROKING A CASE STUDY ON ANANTAPURAMU DISTRICT

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### ABSTRACT

*A portfolio is a collection of investments held by an institution or a private individual. The portfolio management is a continuous process. It is a dynamic activity. The following are the basic operations of a portfolio management. The portfolio management process is the process an investor takes to aid him in meeting his investment goals. Portfolio Management is a process encompassing many activities of investment in assets. Portfolio Management is a process encompassing many activities of investment in assets. The modern portfolio theory discusses the relationship between different securities and then draws inter relationship of risks between them. Portpolio analysis provides the input for next phase in Portpolio Management , which is portfolio selection. The proper goal of portfolio construction is to generate a portfolio that provides the highest returns at a given level of risk.*

**KEYWORDS:** *Involves, Process, Create, Relationship*

### INTRODUCTION

A portfolio is a collection of investments held by an institution or a private individual. In building up an investment portfolio a financial institution will typically conduct its own investment analysis, whilst a private individual may use of the services of a financial advisor or a financial institution which offers portfolio management services. Holding a portfolio is part of an investment and risk limiting strategy called diversification. By owning several assets, certain

types of risk (in particular specific risk) can be reduced. The assets the portfolio could include stocks, bonds, options, warrants, gold certificates, real estate, futures contracts, production facilities, or any other item that is expected to retain its value. Portfolio management involves deciding what assets to include in the portfolio, given the goals of the portfolio owner and changing economic conditions. Selection involves deciding what assets to purchase, how many to purchase, when to purchase them, and what assets to divest. These decisions always involve some sort of performance measurement, most typically expected return on the portfolio, and the risk associated with this return (i.e. the standard deviation of the return). Typically the expected returns from portfolios, comprised of different asset bundles are compared.

The portfolio management is a continuous process. It is a dynamic activity. The following are the basic operations of a portfolio management.

### **PORTFOLIO CONSTRUCTION**

The part of the process is the actual construction of the portfolio, which we divide into three sub-parts.

1. The first of these is the decision on how to allocate the portfolio across different asset classes defined broadly as equities, fixed incomes securities and real assets (such as real estate, commodities and other assets).this assets allocation decision can also be framed in terms of investments in domestic assets versus foreign assets, and the factors driving this decision.
2. The second component is the asset selection decision, where individual assets are picked within each assets class to make up the portfolio. In practical terms, this is the step where the stocks that make up the equity component, the bonds that make up the fixed income component and the real assets that make up the real assets component are selected.
3. The final component is execution, where the portfolio is actually put together. Here investors must weigh the costs of trading against their perceived needs to trade quickly. While the importance of execution will vary across investment strategies, there are many investors who fail at this stage in the process.

### **TYPES OF PORTFOLIO MANAGEMENT**

Portfolio management is further of the following types:

#### ➤ **Active portfolio management:**

As the name suggests, in an active portfolio management service, the portfolio managers are actively involved in buying and selling of securities to ensure maximum portfolio to individuals.

#### ➤ **Passive portfolio management:**

In a passive portfolio management, the portfolio manager deals with a fixed portfolio designed to match the current market scenario.

#### ➤ **Discretionary portfolio management services:**

In discretionary portfolio management services, an individual authorizes a portfolio manager to take care of his financial needs on his behalf. The individual issues money to the portfolio manager who in turn takes care of all his investment needs, paper work, documentation, filing

and so on. In discretionary portfolio management, the portfolio manager has full rights to take decisions on his client's behalf.

➤ **Non-discretionary portfolio management services:**

In non discretionary portfolio management services, the portfolio manager can merely advise the client what is good and bad for him but the client reserves full right to take his own decisions.

**PROCESS AND STRUCTURE OF A PORTFOLIO**

The portfolio management process is the process an investor takes to aid him in meeting his investment goals.

The procedure is as follows:

**1. Create a Policy Statement:**

A policy statement is that contains the investor's goals and constraints as it relates to his investments.

**2. Develop an investment strategy:**

This entails creating a strategy that combines the investor's goals and objectives with current financial market and economic conditions.

**3. Plan created implement:**

This entails putting the investment strategy to work investing in a portfolio that meets the clients goals and constraint requirements.

**4. Monitor and update the plan:**

Both markets and investors needs change as time changes. As such, it is important to monitor for these changes as they occur and to update the plan to adjust for the changes that have occurred.

**RESEARCH METHODOLOGY OF THE STUDY:**

Research design or research methodology is the procedure of collecting, analyzing and interpreting the data to diagnose the problem and react to the opportunity in such a way where the costs can be minimized and the desired level of accuracy can be achieved to arrive at a particular conclusion.

The methodology used in the study for the completion of the project and the fulfillment of the project objectives, is as follows.

- Market prices of the companies have been taken for the years of different dates, by dividing the companies into 5sectors.
- A final portfolio is made at the end of the year to know the changes (increases/decreases) in the portfolio at the end of the year.

**A DATA COLLECTIONS:**

**1.Primary data:**

The primary data information is gathered from SHIRAM INSIGHT by interviewing SHIRAM INSIGHT executives.

## 2. Secondary data:

The secondary data is collected from various financial books, magazines and from stock lists of various newspapers and SHIRAM INSIGHT as part of the training class undertaken for project.

### OBJECTIVES OF THEE STUDY

- To study the investment pattern and its related risks & returns.
- To find out optimal portfolio that gives optimal return at a minimized risk to the investor.
- To check whether the selected portfolios are yielding a satisfactory and constant return to the investor over a period of time.
- To provide basic idea of different stock market investment instruments to investor.
- To provide knowledge to investor about various type of risk associated with various investment instruments.

### Scope of the Study

The study covers the calculations between the different securities in order to find out at what percentage funds should be invested among the companies in the portfolio. Also the study includes the calculation of individual Standard Deviation of securities and ends at the calculation of weights of individual securities involved in the portfolio. These percentage help in allocating the funds available for investments based on risky portfolio.

- ✓ Monitoring the performance of portfolio by incorporating the latest market conditions.
- ✓ Identification of the investor's objective, constraints and performances.
- ✓ An evolution of portfolio income.
- ✓ Making Revision in the portfolio.
- ✓ Implementation of the strategies in tune with investment objectives.

### Need of the Study

- ❖ Portfolio Management is a process encompassing many activities of investment in assets. It is a dynamic and flexible concept and involves regular and systematic analysis.
- ❖ Portfolio based upon on the investors objectives, constraints, preferences for risk and returns.
- ❖ The portfolio is reviewed and adjusted from time to time in tune with the market.
- ❖ The changes in the portfolio are to be effected to meet the changing condition.

### Limitations

- This study has been conducted purely to understand portfolio management for investors.
- Construction of portfolio is restricted to two companies based on Markowitz model.
- Very few and randomly selected scripts are analyzed from BSE listings.
- Detailed study of the topic was not possible due to limited size of the project.
- When we over selves manage and trade, its a different scenario altogether.



**Importance of the Study:**

A project is a collection of tasks designed to create a new product, infrastructure, service or result within a specified period. A company may have several project portfolio of technology, quality control and human resource study, portfolio management is the centralized management of portfolio and the responsibility of the portfolio management office. (PMO).

**Basics:**

The PMO structure depends on the company size and the number of ongoing projects. For example a large public sector organization may have several PMOs staffed with dozens of employees while a small business may have an informal PMO structure of mainly part-time staff. The PMO manger usually reports of to senior management such as the chief operating officer.

**Coordination:**

The PMO is usually the central coordination office for a company's projects. It makes resource allocation decisions after considering the impact on the entire company. for example it may move resources between two projects to ensure they are both

**Implementation:**

PMOs play an important role in the portfolio implementation process usually which usually begins with a list of viable projects. PMO analysts may use cost/benefit analysis to whittle down this list to one or two projects that generate the most return. Cost/benefit analysis determinants the net cost or benefit of undertaking a project. They can bring a fresh perspective to problems and work with the project team to resolve these problems.

**Issues:**

PMOs do not guarantee project success. For example a project may fall behind schedule because of last minute changes demanded by the client or if product testing uncovers a quality problem that requires a major redesign. PMOs are cost centers a major redesign. PMOs are cost centers which mean that they do not make any money. Therefore they have to control costs and add value to ongoing projects to maintain management support.

**Data Analysis: Portfolio Management**

Portfolio analysis believes in the maximization of return through a combination of securities. The modern portfolio theory discusses the relationship between different securities and then draws inter relationship of risks between them. It is not necessary to achieve success only by trying to get all securities of minimum risk. The theory states that by combining a security of low risk with another security of high risk, success can be achieved by an investor in making a choice of investment outlets.

**Average Returns:**

The arithmetic average measures the central tendency. The purpose of computing an average value for a set of observations is to obtain a single value which is representative of all the items. The main objective of averaging is to arrive at a single value which is a representative of the characteristics of the entire mass of data and arithmetic average or mean of a series is the value obtained by dividing the sum of the values of various items in a series ( $\sum x$ ) divided by the number of items (N) constituting the series. Thus, if  $X_1, X_2, \dots, X_n$  are the given N observations. Then  $\bar{X} = \frac{X_1 + X_2 + \dots + X_n}{N}$

**Return: Current price-Previous price/ Previous price\*100**

**Average Returns of the Company:**

S.NO	Security	Average
1	WIPRO	1.84
2	ICICI	8.48
3	RELIANCE	11.76
4	RANBAXY	23.06
5	ITC	-1.76

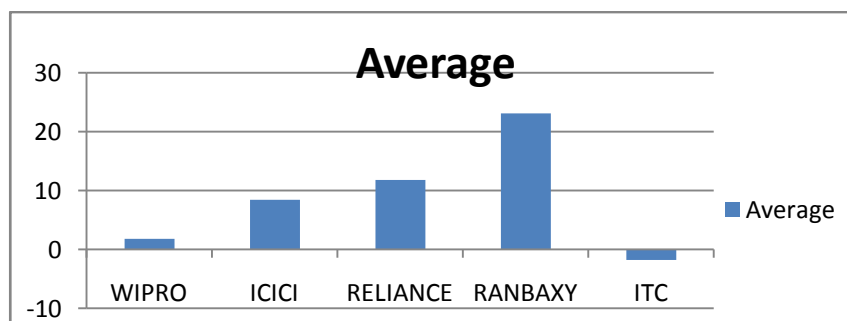
**Average Returns:  $R = R_i/N$**

**Where  $R$  = Average Return**

$R_i$ =Return of the security

$i$ = for the year  $T$

$N$ =Number of years



In this particular securities the RANBAXY Company had highest average returns is 23.06 compare to the remaining companies. For instance the reason behind their high sales or expand business. The ITC Company had lowest returns is -1.76 compare to other companies the reason behind there is low sales. Other securities are earning medium range returns such as WIPRO, ICICI, RELIANCE.

**Standard Deviation:**

The concept of standard deviation was first suggested by Karl Pearson in 1883. It may be defined as the positive square root of the arithmetic mean of the squares of deviations of the given observations from their arithmetic mean. In short S.D may be defined as Root Mean Square Deviation from Mean it is by far the most important and widely used measure of studying dispersions.

For a set of  $N$  observations  $X_1, X_2, \dots, X_n$  with mean  $X$ ,

Deviations from Mean:  $(X_1 - X), (X_2 - X), \dots, (X_n - X)$

Mean-square deviations from mean =  $1/N(X_1 - X)^2 + (X_2 - X)^2 + \dots + (X_n - X)^2 = 1/N \sum (X - X)^2$ .

**Variance:**

The square of standard deviation is known as Variance.

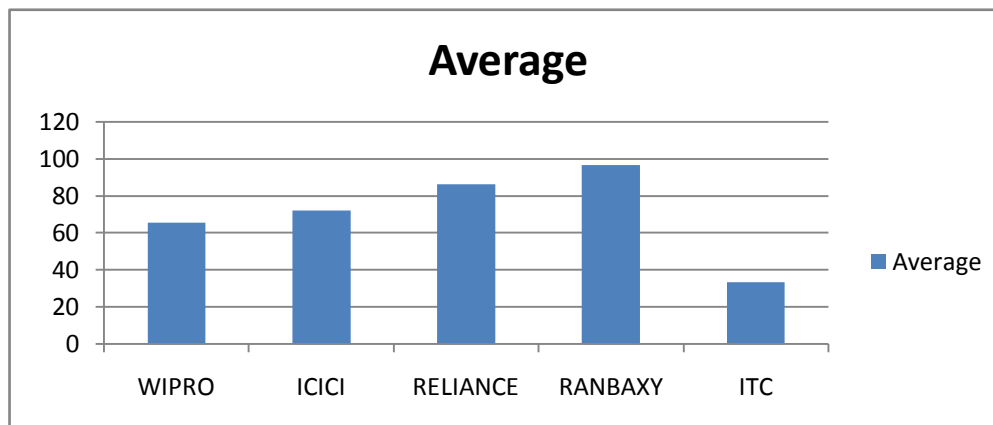
Variance is the square root of the S.D:

Variance = (S.D)<sup>2</sup>

### Standard Deviation of the Companies:

S.NO	Security	Average
1	WIPRO	65.49
2	ICICI	72.11
3	RELIANCE	86.30
4	RANBAXY	96.62
5	ITC	33.59

S.D= $\sqrt{\frac{1}{n-1}(\sum R-R)^2}$



Based on above calculations standard deviation like that Ranbaxy is highest 96.62 and ITC is lower 33.59 where other securities are having medium S.D. Other securities are earning medium range such as WIPRO, ICICI and RELIANCE.

### Correlation:

Correlation is a statistical technique which is a statistical technique, which measures and analyses the degree to which two or more variables fluctuate with reference to one another.

Correlation thus denotes the inter dependence amongst variables. The degree are expressed by a coefficient which ranges between -1 +1. The direction of change is indicated by (+) or (-) signs. The former refers to a sympathetic movement in a same direction and the later in the opposite direction.

Karl Pearson method of calculating coefficient is based on covariance of the concerned variables. It was devised by Karl Pearson a great British biometrician.

This measure known as Pearson an correlation coefficient between two variables X and Y usually denoted by r is a numerical measure of linear relationship and is defined as the ratio of the covariance between X and Y to the product of SD of X and Y.

### Symbolically

$$r = \text{Cov}(X,Y)/\text{SD of } XY$$

$$= \frac{\sum xy}{N} = \frac{\sum XY}{N}$$

SD of XY

$\sum xy$  = sum of the product of deviations in X and Y series calculated with reference to their arithmetic means

X=SD of the series X

Y=SD of the series Y

Security	WIPRO	ICICI	RELIANCE	RANBAXY	ITC
WIPRO	1	0.3787	0.2774	0.9333	0.6444
ICICI		1	0.3093	0.8050	0.3911
RELIANCE			1	0.4326	0.7980
RANBAXY				1	0.7445
ITC					1

Correlation Co-efficient (n Δ ab) = COV(ab) / σa. σb

#### Portfolio Weights:

S.NO	Portfolio	CORRELATION	WEIGHT OF A	WEIGHT OF B
1	Wipro & ITC	0.6444	-0.1120	1.1120
2	Wipro & Ranbaxy	0.9333	1.89	-0.89
3	Wipro & ICICI	0.3787	0.5770	0.423
4	Wipro & Reliance	0.2774	0.683	0.317
5	ITC & Ranbaxy	0.7445	1.228	-0.228
6	ITC & ICICI	0.3911	0.959	0.041
7	ITC & Reliance	0.7980	1.300	-0.30
8	Ranbaxy & ICICI	0.8050	-0.123	1.123
9	Ranbaxy & Reliance	0.4326	0.401	0.599
10	ICICI & Reliance	0.3093	0.627	0.373

#### Formula

Weight of a =  $\sigma_b (\sigma_b - n_{ab} \sigma_a) / (\sigma_a^2 + \sigma_b^2) - (2n_{ab} \cdot \Sigma a \sigma_b)$

Weight of b = (Wb) = 1 - Wa

#### Portfolio Risks:

S.NO	Portfolio	Portfolio Risks:
1	Wipro & ITC	33.10
2	Wipro & Ranbaxy	109.27
3	Wipro & ICICI	56.84
4	Wipro & Reliance	58.54
5	ITC & Ranbaxy	11.69
6	ITC & ICICI	33.47
7	ITC & Reliance	23.82
8	Ranbaxy & ICICI	69.76
9	Ranbaxy & Reliance	23.62
10	ICICI & Reliance	63.09

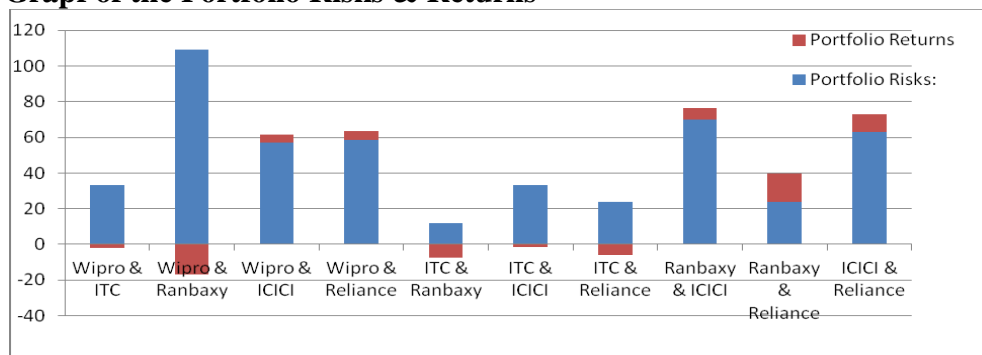
Formula:

$$\Sigma p = \sqrt{\sigma_a^2 W_a^2 + \sigma_b^2 W_b^2 + 2 \cdot \text{cov} \cdot \sigma_a \sigma_b \cdot W_a W_b}$$

### Portfolio Risks & Returns

S.NO	Combination	Portfolio Risks:	Portfolio Returns
1	Wipro & ITC	33.10	-2.16
2	Wipro & Ranbaxy	109.27	-17.05
3	Wipro & ICICI	56.84	4.65
4	Wipro & Reliance	58.54	4.98
5	ITC & Ranbaxy	11.69	-7.42
6	ITC & ICICI	33.47	-1.34
7	ITC & Reliance	23.82	-5.82
8	Ranbaxy & ICICI	69.76	6.69
9	Ranbaxy & Reliance	23.62	16.29
10	ICICI & Reliance	63.09	9.70

### Graph of the Portfolio Risks & Returns



In the above graph the combination of Portfolio Risk & Portfolio Returns. In this particular combination of WIPRO & RANBAXY Company had highest Portfolio risk is 109.27 compare to the remaining companies. The ITC & RANBAXY had lowest risk is 11.69 compare to other companies. Based on above calculations Portfolio Returns like that RANBAXY & RELIANCE are highest i.e., 16.29 and WIPRO & RANBAXY are lowest i.e., -17.04 where other Co. are having medium returns.

### Portfolio Selection, Revision & Evaluation

#### Portfolio Selection:

Portfolio analysis provides the input for next phase in Portfolio Management, which is portfolio selection. The proper goal of portfolio construction is to generate a portfolio that provides the highest returns at a given level of risk. The inputs from portfolio analysis can be used to identify the set of efficient portfolios. From this the optimal portfolio must be selected for investment. Harry Markowitz portfolio theory provides both the conceptual framework and analytical tools for determining the optimal portfolio in a disciplined and objective way. So out of the various combinations the optimal portfolio is RANBAXY & RELIANCE, as this portfolio has minimum

risk 23.62% with maximum return of 16.29% . Hence I can say that it is better to invest in these portfolios.

### **Portfolio Revision**

Economy and financial markets are dynamic change take place almost daily. As time passes securities which were once attractive may lease to be so. New securities with promise of high return and low risk may emerge. The investor now has to revise his portfolio in the light of developments in the market. This leads to purchase of new securities ans sale of some of the existing securities and their proportion in the portfolio changes as aresult of the revision.

### **Portfolio Evaluation:**

The objective of constructing a portfolio and revising me priiodically is to earn maximum returns with minimum risk. Portfolio evaluation is the process which is concerned with assessing the performance of the portfolio over a selected period of time of returns and risk. This involves quantities measurement of actual return realized. Alternative measures of performance evaluitiion have been developed by investor and portfolio managers for their use.

### **Calculatios of Average Returns of Companies**

#### **WIPRO**

Year	Opening Share Price (PO)	Share	Closing Share Price (P1)	(P1- PO)	(P1- PO)/PO*100
2014-15	538.55		559.40	20.85	3.87
2015-16	571.60		432.10	-139.50	-24.40
2016-17	488.75		245.90	-242.85	-49.69
2017-18	330.85		706.95	376.10	113.67
2018-19	671.50		441.40	-230.10	-34.27
<b>Totla Returns</b>					<b>9.18</b>

#### **Returns are calculated as below**

Return of 2014-15 =  $(P1-PO)/PO*100 = (559.40-538.55)/538.55*100 = 3.87$

Return of 2015-16 =  $(P1-PO)/PO*100 = (432.10-571.60)/571.60*100= -24.40$

Return of 2016-17 =  $(P1-PO)/PO*100 = (245.90-488.75)/488.75*100 = -49.69$

Return of 2017-18 =  $(P1-PO)/PO*100 = (706.95-488.75)/330.85*100 = 113.67$

Return of 2018-19 =  $(P1-PO)/PO*100 = (441.40-671.50)/ 671.50*100 = -34.27$

Average Return =  $9.18/5=1.84$

#### **ICICI**

Year	Opening Share Price (PO)	Share	Closing Share Price (P1)	(P1- PO)	(P1- PO)/PO*100
2014-15	591.75		853.35	261.60	44.20
2015-16	865.85		769.40	-96.42	-11.13
2016-17	879.60		332.80	-546.80	-96.27
2017-18	479.20		952.50	473.75	98.86
2018-19	951.95		1016.35	64.40	6.76
<b>Totla Returns</b>					<b>42.42</b>

#### **Returns are calculated as below**

Return of 2014-15 =  $(P1-P0)/P0*100 = (853.35-591.75)/ 591.75*100 = 44.20$

Return of 2015-16 =  $(P1-P0)/P0*100 = (769.40-865.85)/ 865.85*100= -11.13$

Return of 2016-17 =  $(P1-P0)/P0*100 = (332.80-879.60)/ 879.60*100 = -96.27$

Return of 2017-18 =  $(P1-P0)/P0*100 = (952.50-479.20)/ 479.20*100 = 98.86$

Return of 2018-19 =  $(P1-P0)/P0*100 = (1016.35-951.95)/ 951.95*100 = 6.76$

Average Return =  $42.42/5=8.48$

### Reliance

Year	Opening Share Price (PO)	Closing Share Price (P1)	(P1- PO)	(P1- PO)/PO*100
2014-15	615.45	494.20	-121.25	-19.70
2015-16	509.75	1250.85	741.10	145.38
2016-17	1430.55	515.55	-915.00	-68.96
2017-18	695.20	999.05	303.85	43.71
2018-19	1137.40	606.75	-530.65	-46.65
<b>Totla Returns</b>				<b>58.78</b>

Returns are calculated as below

Return of 2014-15 =  $(P1-P0)/P0*100 = (494.20-615.45)/ 615.45*100 = -19.70$

Return of 2015-16 =  $(P1-P0)/P0*100 = (1250.85-509.75)/ 509.75*100= 145.38$

Return of 2016-17 =  $(P1-P0)/P0*100 = (515.55-1430.55)/ 1430.55*100 = -68.96$

Return of 2017-18 =  $(P1-P0)/P0*100 = (999.05-695.20)/ 695.20*100 = 43.71$

Return of 2018-19 =  $(P1-P0)/P0*100 = (606.75-1137.40)/ 1137.40*100 = -46.65$

Average Return =  $58.78/5=11.76$ .

### Ranbaxy

Year	Opening Share Price (PO)	Closing Share Price (P1)	(P1- PO)	(P1- PO)/PO*100
2014-15	472.50	351.91	-120.60	-25.52
2015-16	371.95	438.45	66.50	17.88
2016-17	479.75	165.70	-314.05	-65.46
2017-18	166.00	475.40	309.40	186.38
2018-19	443.30	452.20	8.90	2.01
<b>Totla Returns</b>				<b>115.29</b>

Returns are calculated as below

Return of 2014-15 =  $(P1-P0)/P0*100 = (351.91-472.50)/ 472.50*100 = -25.52$

Return of 2015-16 =  $(P1-P0)/P0*100 = (438.45-371.95)/ 371.95*100= 17.88$

Return of 2016-17 =  $(P1-P0)/P0*100 = (165.70-479.75)/ 479.75*100 = -65.46$

Return of 2017-18 =  $(P1-P0)/P0*100 = (475.40-166.00)/ 166.00*100 = 186.38$

Return of 2018-19 =  $(P1-P0)/P0*100 = (452.20-443.30)/ 443.30*100 = 2.01$

Average Return =  $115.29/5=23.06$

### ITC (Indian Tobbacc0 Corporation)

Year	Opening Share Price (PO)	Closing Share Price (P1)	(P1- PO)	(P1- PO)/PO*100
2014-15	203.75	151.15	-52.60	-25.81
2015-16	160.05	206.25	46.20	28.86
2016-17	219.90	184.85	-35.05	-15.94
2017-18	188.90	263.05	74.15	39.25
2018-19	265.85	172.40	-93.45	-35.15
<b>Totla Returns</b>				<b>-8.79</b>

Return of 2014-15 =  $(P1-P0)/P0*100 = (151.15-203.75)/ 203.75*100 = -25.81$

Return of 2015-16 =  $(P1-P0)/P0*100 = (206.25-160.05)/ 160.05*100= 28.86$

Return of 2016-17 =  $(P1-P0)/P0*100 = (184.85-219.90)/ 219.90*100 = -15.94$

Return of 2017-18 =  $(P1-P0)/P0*100 = (263.05-188.90)/ 188.90*100 = 39.25$

Return of 2018-19 =  $(P1-P0)/P0*100 = (172.40-265.85)/ 265.85*100 = -35.15$

Average Return =  $-8.79/5 = -1.76$

### Calculation of Portfolio Risks

#### 1. WIPRO & ITC

$\sigma_a=65.49$   $\sigma_b=33.59$ ,  $W_a=-0.1120$ ,  $W_b=1.1120$ ,  $n_{ab}=0.6444$

$\sigma_p=65.49^2 * -0.1120^2 + 33.59^2 * 1.1120 + 2(0.6444*65.49*33.59*-0.1120*1.1120)$

$=\sqrt{1095.88}=33.10$

In this combination as per the calculations and the study; the Wipro bears proportion of investment -0.1120 and ITC 1.1120 which is more than when compared to Wipro. The S.D. risks are 65.49 and 33.59 with returns of Wipro.1.84 and -1.76 ITC in this combination there are high risks but returns are very low. Investors who are willing to take high risk can invest in Wipro.

#### 2. WIPRO & RANBAXY

$\sigma_a=65.49$   $\sigma_b=96.62$ ,  $W_a=1.89$ ,  $W_b=-0.89$ ,  $n_{ab}=0.9333$

$\sigma_p=65.49^2 * 1.89^2 + 96.62^2 * 0.89^2 + 2(0.9333*65.49*96.62*1.89*-0.89)$

$=\sqrt{11941.65} = 109.27$

The portfolio weights of Wipro 1.89 and -0.89 of Ranbaxy the SD. Of Wipro and Ranbaxy are 65.49, 96.62 which are reduced to 109.27 the investors who are willing to take risk can invest in Ranbaxy because its returns are 1.84 which is more than Wipro 23.06.



**3. WIPRO & ICICI**

$$\sigma_a=65.49 \sigma_b=72.11, W_a=0.577, W_b=-0.423, \text{ nab}=0.3787$$

$$\sigma_p=65.49^2 * 0.577^2 + 72.11^2 * 0.423^2 + 2(0.3787*65.49*72.11*0.577*0.423)$$

$$=\sqrt{3231.31} = 56.84$$

The portfolio weights of Wipro and ICICI are 0.5770 and 0.423 and their SD. Are 65.49 and 72.11 which is reduced to 56.84 the returns of Wipro and ICICI are 1.84 and 8.48 the portfolio return of this combination is 4.64. the investors are suggesting investing in Wipro because it is giving high return compare to ICICI.

**4. WIPRO & RELIANCE**

$$\sigma_a=65.49 \sigma_b=86.30, W_a=0.683, W_b=-0.317, \text{ nab}=0.2774$$

$$\sigma_p=65.49^2 * 0.683^2 + 86.30^2 * 0.317^2 + 2(0.2774*65.49*86.30*0.683*0.317)$$

$$=\sqrt{3428.04} = 58.54$$

In this combination the portfolio weights are 0.683 and 0.317 and the SD. Of WIPRO and RELIANCE are 65.49 and 86.30 which is reduced to 58.54 the returns are 1.84 and 11.76 in this combination the investors are suggested to go for WIPRO because its risk and returns are moderate.

**5. ITC & RANBAXY**

$$\sigma_a=33.59 \sigma_b=96.62, W_a=1.228, W_b=-0.228, \text{ nab}=0.7445$$

$$\sigma_p=33.59^2 * 1.228^2 + 96.62^2 * -0.228^2 + 2(0$$

$$7445*33.59*96.62*1.228*-0.228)$$

$$=\sqrt{136.87} = 11.69$$

The portfolio weights of ITC & RANBAXY are 1.228 and -0.228 the standard deviation are 33.59 and 96.62 which is reduced to 11.69, the returns are ITC & RANBAXY ARE -1.76 and 23.06. investors who are willing face high risk can invest in RANBAXY because its returns are more than ITC.

**6. ITC & ICICI**

$$\sigma_a=33.59 \sigma_b=72.11, W_a=0.959, W_b=-0.041, \text{ nab}=0.3911$$

$$\sigma_p=33.59^2 * 0.959^2 + 72.11^2 * 0.041^2 + 2(0.3911*33.59*72.11*0.959*0.041)$$

$$=\sqrt{1120.90}=33.47$$

The portfolio weights of ITC & ICICI 0.95, 0.041 and the SD are 33.59 and 72.11 which are reduced to 33.47 and returns are -1.76 and 8.48. it is suggested to investors to invest in ICICI because it is giving fair returns when compared to ITC.

**7. ITC & RELIANCE**

$$\sigma_a=33.59 \sigma_b=86.30, W_a=1.300, W_b=-0.3, \text{ nab}=0.7980$$

$$\sigma_p=33.59^2 * 1.300^2 + 86.30^2 * 0.3^2 + 2(0.7980*33.59*86.30*1.300*-0.3)$$

$$=\sqrt{567.82}=23.82$$

The portfolio weights of ITC & RELIANCE are 1.30 and -0.30 and SD are 33.59 and 86.30 and returns of ITC & RELIANCE are -1.76 and 11.76. This combination is not that much good risks are very high when compared to the return investors who will face high risk can invest in ITC.

### 8. RANBAXY & ICICI

$$\sigma_a=96.62 \quad \sigma_b=72.11, \quad W_a=-0.123, \quad W_b=-1.123, \quad n_{ab}=0.8050$$

$$\sigma_p=96.62^2 * 0.123^2 + 72.11^2 * 1.123^2 + 2(0.8050*96.62 * 72.11 * -0.123 * 1.123)$$

$$=\sqrt{4867.01}=69.76$$

The portfolio weights are -0.123 and 1.123 the SD risks are 96.62 and 72.11 the returns are 23.06 and 8.48 in this combination RANBAXY is the best option to invest.

### 9. RANBAXY & RELIANCE

$$\sigma_a=96.62 \quad \sigma_b=86.30, \quad W_a=0.401, \quad W_b=0.599, \quad n_{ab}=0.4326$$

$$\sigma_p=96.62^2 * 0.401^2 + 86.30^2 * 0.599^2 + 2(0.4326*96.62 * 86.30 * 0.401 * 0.599)$$

$$=\sqrt{557.90}= 23.62$$

The portfolio weights of 0.401 and 0.59 and the SD are 96.62 and 86.30 the returns are 23.06 and 11.76. in this combination the RANBAXY is giving moderate returns with moderate SD when compared to RELIANCE because it is having high risk.

### 10. ICICI & RELIANCE

$$\sigma_a=72.11 \quad \sigma_b=86.30, \quad W_a=0.627, \quad W_b=0.373, \quad n_{ab}=0.3093$$

$$\sigma_p=72.11^2 * 0.627^2 + 86.30^2 * 0.373^2 + 2(0.3093*72.11 * 86.30 * 0.627 * 0.373)$$

$$=\sqrt{3980.71}=63.09$$

The portfolio weights are 0.627 and 0.373 of ICICI & RELIANCE the weights suggests that invest more in ICICI but the SD are 72.11 and 86.30 and returns are 8.48 and 11.76 the ICICI is the best option to invest.

### FINDINGS

- The combination of WIPRO and ITC portfolio risk is 33.10. which suggest the investor to go for portfolio investment rather than individual investment.
- The portfolio risk of two companies WIPRO & RANBAXY is 109.27. which suggest the investor to go for the portfolio investment rather than individual investment.
- The portfolio risk of WIPRO & ICICI is 56.84 which reduce the risk of individual stocks.
- The combined portfolio risk is 58.54 i.e., WIPRO & RELIANCE. It reduces the risk of the investor and gets higher returns if he invests in portfolio.
- The portfolio risk of ITC & RANBAXY is 11.69. which reduce the risk instead of investing in individual companies.
- The portfolio risk of ITC & ICICI is 33.47. Which suggest the investor to go for portfolio investment rather than individual investment.

- The portfolio risk of ITC & RELIANCE is 23.82. Which suggest the investor to go for portfolio investment rather than individual investment.
- The portfolio risk of ICICI & RELIANCE is 63.09 it reduces the risk of the investor and gets higher returns if he invests in portfolio.

### Suggestions

Before investing in shares should look at type of shares, you want to buy and the way in which you want to deal on the stock market.

- ✓ Invest your capital in a single company.
- ✓ Invest your capital in a number of different companies a portfolio of shares.
- ✓ The investor is able to know the risk and return of the shares by using the analysis.
- ✓ The investor who will not take risk involves taking of less return.
- ✓ A small investor can maintain a portfolio with diversified stocks rather than investing in a few stocks which he feels are good.
- ✓ The investor should include all those securities which are undervalued in their portfolio and remove those securities that are overvalued.

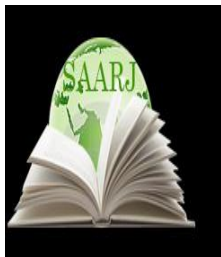
### CONCLUSION

- ❖ ICICI, RELIANCE & RANBAXY are good to invest because there returns are good when compared ton WIPRO and ITC.
- ❖ As per as Standard Deviation RELIANCE has highest risk security and next highest risk securities are WIPRO & RANBAXY. ITC & ICICI are having moderate risks.
- ❖ The investor who bears high risk will be getting high returns.
- ❖ The investors as to maintain the portfolio of diversified sectors stocks rather than investing in a single sector of different stocks.
- ❖ People who are investing in portfolios mostly depend on the advice of their friends, relatives, and financial advisers.
- ❖ Most of the investor invests in basic necessities. They plan to invest in insurance and pension fund as these give guarantied returns and less risky. Most of the investors feel that inviting in stock/capital market is of high risk therefore they don't invest in them.

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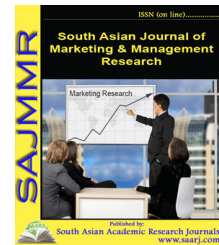
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# South Asian Journal of Marketing & Management Research (SAJMMR)

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## THE EFFECTIVENESS OF THE USE OF BLOCKCHAIN TECHNOLOGIES IN SECTORS OF THE NATIONAL ECONOMY

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### ABSTRACT

*The article discusses the application of blockchain technology in industries and sectors of the national economy. The results of the effective using of blockchain technology in the financial system at the micro and macro levels, the insurance system, public administration, e-commerce, industry, intellectual property registration, education, health care are analyzed. The application of IT technologies in the service sector, the dynamics of the structure of revenues from communication services of communication and information enterprises are analyzed. Also, the volume of services provided in the field of information and communication of economic activity in Uzbekistan forecast indicators for 2019-2022 is determined by econometric models.*

**KEYWORDS:** *Block Chain, Transaction, Decentralization, Block chain Platform, Data Infrastructure, Bit Coin, Smart Property, Smart Government, Iot Smart Health Care. The Correlation Coefficient, Determination Coefficient.*

### INTRODUCTION

To develop the national economy, strengthen macroeconomic stability, attract foreign investment, modernize industry and build modern high-tech production, several measures are being taken. The analysis of current practice requires the effective implementation of the tasks of comprehensive socio-economic development, the timely identification and elimination of problems that hinder the ongoing reforms in our country. Block chain technology in various sectors of the economy through network efficiency upgrade options will appear. The introduction of block chain technology into networks is characterized by the provision of an open, secure and distributed transaction book. Of course, the digitization of networks was a guarantee of a full transition to block chain technology. It should be noted that several problematic situations may arise in this process. In particular, the direct costs associated with the creation of a new platform based on block chain technology in the network, the costs associated with long-term storage of

block chain platform records, the cost of information security for block chain technology, finding solutions to block chain platform management responsibilities, standardization regulations, cooperation tribes.

## LITERATURE REVIEW

The development of the digital economy is closely linked to the issues of further structural transformation of the economy, public administration, as well as the creation of new models of interaction between the state, business and population-based on digital technologies. E. Brynjolfsson and B. Kahin were first discussed in the mid-1990s as a topic for discussion on digitalization of the economy, with the first definitions being made as a means of engaging businesses and consumers in the virtual world.

By the end of the 1990s, the analysis mainly focused on ways to increase economic efficiency in enterprises using the Internet in the economy. The impact of the Internet resource on the digitization of the economy has been widely evaluated and discussions on its hidden capabilities have been launched [1].

Don & Alex Tapscott, in his work *The Blockchain Revolution*, described the blockchain as a digitally distributed magazine of economic transactions. It is a programmed system for keeping many financial transactions and transactions with economic profitability. In his works, William Mougayar outlines the impact of blockchain technology on the activities of business entities through specific case studies and discusses the challenges that exist today in implementing this technology and how to address them [2].

The possibilities of blockchain technology and the research of scientists conducting scientific research in countries that are currently achieving high economic growth using this technology were explored. In particular, Singh, S, Singh. - blockchain: the future of financial and cyber security [3], Fu, D., Fang, L: blockchain to maintain reliable accounts in the social network [4], Hu, X., Weber, I., Staples, M. : architecture taxonomy of blockchain-based systems for design [5], Wan, Z., Lo, D., Xia, X. : Characteristics of errors in blockchain systems: empirical studies at the state level [6], Porru, S., Pinna, A., Marchesi, M: blockchain software: problems and new directions [7], Halpin, H., Piekarska, M. : Security and Privacy in Blockchain [8], Ahram, T., Sargolzaei, A. : News in Blockchain Technology [9], Bdiwi, R., de Runz, C. : new popular teaching methods based on blockchain technology [10], Nakasumi, M. : supply chain based on blockchain technology [11], Chen, Z., Zhu, Y. : blockchain technology: applied research, perspective plans and challenges [12], Hou, H. : Application of blockchain technology in e-government in China [13], Li, Y, Huang, J., Qin, S. : big data model of blockchain-based security sharing effects [14] have been studied in scientific studies.

Also, we have implemented several block chain analytics based on Greenwich Associates data on introducing block chain technology in corporate financial management. In the present study, the importance of block chain technology in the activities of business entities, taking into account the best practices of foreign countries to further develop the digital economy, while ignoring the above research, is of scientific importance.

### The main part

A block chain is also a distributed database or general list of information about all transactions or digital events that have been executed and distributed among the parties involved. Each transaction reflected in the mass journal is approved by agreement of the majority of the system

participants. The database entered into the system can never be deleted. The block chain identifies and verifies each step taken in the operations performed and reflects the record to be checked. Besides currency, block chain technology will be available in smart contracts, accounts, and cloud storage blocks.

Block chain technology introduced into the network is a tool that enables many processes and transaction services to become more transparent, decentralized, secure, and democratic with no third-party organization in the middle. Undoubtedly, the role that block chain plays as a digital identification method will be crucial soon to validate citizens and prove their identity to the set of digital services available in this interconnected world. A barrier in this area can help improve a person's personal outlook on life and privacy. This technology can lead to the rapid development of industries. For example, the use of block chain technologies in the smart city project, the application of banking and payments, the use of population growth forecasting, the use of smart medical software, introducing elections in the voting process, the digitization of public services.

In the process of globalization of the economy, there are problems with large-scale databases, their storage, processing and security. Block chain technology has several advantages, such as the use of platforms such as cloud storage platforms, large-scale databases, smart contracts, which allow to store, process and take security measures of large-scale collected databases [15].

Expanding the scope of information exchange between all users and third parties through the use of block chain technology within networks, speeding up the exchange time, simplifying processes, clearly defining distribution tasks, making sound financial planning decisions based on the collected database, developing forecasts for future periods seeker software will be available.

As a developing technology, block chain is strengthening because of its ability to interrupt in various industries and domains. This technology is expected to prove itself with more practical efforts to prove the concept. Block chain technology can have a positive impact on intrusion detection [16].

Using block chain technology in the following sectors and industries of the Uzbek economy today would speed up the process of digitization of the national economy, ensure transparency, eliminate corruption schemes, and eliminate the shadow economy:

Ability to accurately record micro-contracts using the block chain in the insurance system, perform calculations related to micro-payments, carry out constant control of collective insurance contracts, organize and monitor a high level of customer identification, certification, actuarial calculations with high accuracy can be.

Through introducing public administration, there will be an opportunity to ensure the transparency of the management system, prevent corruption, reduce the human factor in the governance process, ensure fair elections, collective control and monitoring of budget execution, timely payment of taxes and other mandatory payments.

Full control of the network through introducing block chain technology in the industry, early detection of future problems through continuous critical analysis of the system, continuous optimization of industrial cost, continuous monitoring of the cost structure, limiting the human factor in the industry, complete digitization of the process can be achieved [17].

Technologically improve the quality of education by introducing block chain technology in the education system. It is possible to optimize the cost of education, dramatically reduce the cost of education, manage the flow of personnel, control staff turnover.

Through the use of these technologies in the health care system, it is possible to establish smart medicine, manage and optimize the flow of state budget expenditures on medical services, implement collective control, digitize data related to public health and life expectancy [18,19].

Given the main trends in the service's dynamics sector in the national economy based on the development of the digital economy, it should be noted that the main condition for their formation and implementation is the need for sustainable development of the country's economy, which is reflected in the dynamics of key macroeconomic indicators.

World experience shows that generalization and local practices in services serve as a basis for shaping the dominant trends in the service's development sector at the current stage of economic development.

These include:

- Creation of general service technology in the form of a standardized system using innovative technologies;
- There is a rapid integration of products and services based on information and communication technologies;
- There is a top-level of requirements for the professional training of service personnel;
- A sufficiently developed level of service infrastructure provided through digital technologies has been created;
- fresh markets (including external) for the sale of software products, services in the education market, provision of engineering services, etc.;
- After service in the service sector (development of the home appliances market, complex technical products for various sectors of the economy, etc.), the acceleration of service continues.

**TABLE 1 PROCEEDS FROM SALES OF COMMUNICATIONS AND INFORMATION SERVICE ENTERPRISES (% OF TOTAL)<sup>1</sup>**

	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Communication - automation services - total</b>	<b>100,0</b>	<b>100,0</b>	<b>100,0</b>	<b>100,0</b>	<b>100,0</b>	<b>100,0</b>	<b>100,0</b>	<b>100,0</b>	<b>100,0</b>
<b>including:</b>									
<b>Mail</b>	3,8	3,8	3,8	4,4	4,2	3,5	3,3	2,4	2,4
<b>Telegraph</b>	0,0	0,0	0,0	0,0	0,02	0,02	0,02	0,02	0,02
<b>Private communication</b>	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
<b>Long distance and international telephone</b>	13,3	16,7	15,2	14,0	11,1	9,7	12,7	16,1	14,4
<b>Telephone in urban and rural</b>	2,6	2,3	2,0	1,9	1,8	1,7	1,4	1,2	1,4



areas									
<b>Recording, monitoring and protection of radio waves</b>	2,5	2,0	1,4	1,2	1,1	1,0	1,0	1,3	1,5
<b>Mobil</b>	65,3	60,4	59,7	57,3	58,3	58,8	54,2	49,0	50,0
<b>"Internet" network</b>	7,2	8,6	10,8	14,0	15,8	17,0	21,4	22,9	23,0
<b>Data transmission network</b>	3,5	4,0	5,0	5,0	5,5	6,1	3,9	4,8	5,0
<b>Transmission and reception of television programs</b>	1,0	1,1	1,2	1,3	1,4	1,5	1,5	1,6	1,6
<b>Transmission and reception of radio programs</b>	0,2	0,2	0,1	0,1	0,1	0,1	0,1	0,2	0,2
<b>Other types of communication</b>	0,5	0,8	0,7	0,7	0,6	0,5	0,4	0,4	0,4

In recent years in the Republic of Uzbekistan, we can observe the dynamic growth of revenues from communication and information services, which are the basis for the development of the digital economy. The data in Table 2 show that in 2011-2019, the share of mobile Internet, long-distance and international telephone services in the structure of revenues of communication and information enterprises increased. Over the years analyzed, there has been a change in the number of variations in the shade of revenues from postal, urban and rural telephone, radio frequency registration, control and protection services.

Modelling the dynamics of key indicators of economic activity in information and communication in the Republic of Uzbekistan can be done by using models such as trends, tendencies and time series in the industry. We have analyzed the trends of change in the information and communication indicators of economic activity over the years (Table 2).

The volume of services provided in information and communication of economic activity in Uzbekistan for 2019-2022 has been determined. From 2010 to 2019, the above-mentioned indicators had a steady growth trend.

**TABLE 2 THE VOLUME OF INFORMATION AND COMMUNICATION SERVICES PROVIDED IN THE REPUBLIC OF UZBEKISTAN IN 2010-2019<sup>2</sup> (AT THE EXPENSE OF BILLIONS OF DOLLARS)**

Years	Information and communication services
<b>2010</b>	<b>2 080,2</b>
<b>2011</b>	<b>2 653,0</b>
<b>2012</b>	<b>3 219,3</b>
<b>2013</b>	<b>3 749,8</b>
<b>2014</b>	<b>4 541,3</b>
<b>2015</b>	<b>5 181,5</b>

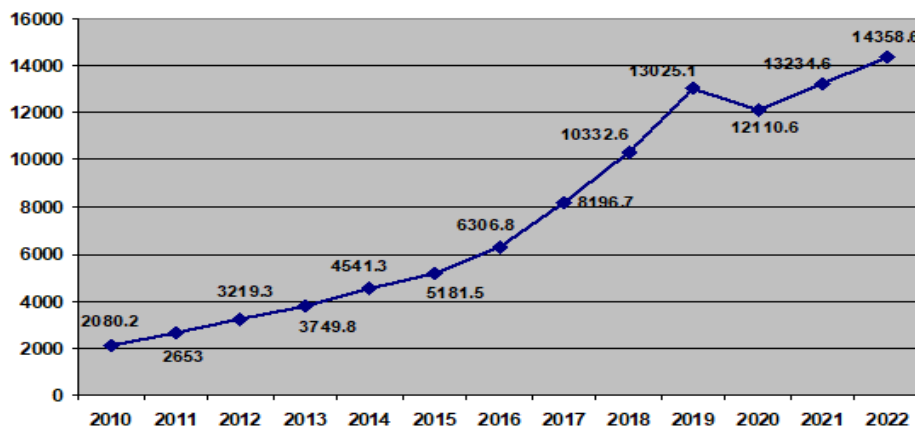
<b>2016</b>	<b>6 306,8</b>
<b>2017</b>	<b>8 196,7</b>
<b>2018</b>	<b>10 332,6</b>
<b>2019</b>	<b>13025,1</b>

The time factor (t) identifies an influencing factor in the correlation-regression analysis on the volume of services provided in information and communication, and the analysis had done. During the analyses, the density of the correlation factors determined, regression analysis also had done, and the regression equation was created. Given that the location of the indicators has grown in stable, precise intervals over the years, the regression relationship was observed as a straight-line relationship.

- correlation coefficient - R = 0.9513;
- coefficient of determination - R<sup>2</sup> = 0.9051;
- Fisher criterion - F = 76.32;
- Significance of the Fisher criterion - Z = 2,30467E-05;

It was found that the regression equation of the relationship in the presence of coefficients comprises the following form (Figure 1):

$$x=1123,997*t-253,353 \quad (1)$$



**Figure 1. Dynamics and forecast of changes in the volume of information and communication services in the Republic of Uzbekistan for 2010-2021 (billion sum)**

The data in Figure 1 show that the dynamics of changes in the volume of information and communication services in 2010-2022 will continue to grow steadily in 2019-2022 and will increase by 6.9 times compared to 2010 and amounted to 14358.6 billion sum.

The above analysis allows us to assess and predict the overall effectiveness of the use of information and communication services in the development of the digital economy. In assessing the prospects for the use of information and communication services, the analysis of the factors influencing the key indicator, sorted by level of importance, can show the future prospects of the industry.

We propose a comprehensive method for calculating the Digital Economy Development Index (DEDI) based on the above analytical data during the implementation of the study. Includes a

review of the development of the digital economy in five areas (Table 3) based on a wide range of indicators that allow an objective analysis of the digital economy. The normalization method is used to make comparisons of the variables expressed in different units of measurement: each of the variables is converted to points on a scale from 0 to 1, where the value for the maximum variable 1 (high score, high "digital development" level) linear change (1):

$$y(x) = \frac{x_i - x_{\min}}{x_{\max} - x_{\min}} \quad (1)$$

Here:

- $x_i$  - the value of the i-th indicator;
- $x_{\min}$  - the minimum value of the indicator;
- $x_{\max}$  - the maximum value of the indicator.

The standardised values add equal weights (Table 1).

The following formula is used to calculate the value of the sub-index:

$$\text{Sub-Index} = \sum_{i=1}^n \frac{y_i}{n} \quad (2)$$

Here:

- $y_i$  - the normalised value of the i-th indicator;
- i - the serial number of the indicator;
- n - the number of indicators.

In the next step, each of the five sub-indices is given a "weight" based on which the total index is calculated using the following formula :

$$\text{Index} = \sum_{j=1}^5 SI_j w_j \quad (3)$$

- $SI_j$  - the value of the j-th sub-index;
- $w_j$  - weight coefficient of the j-th sub-index;
- j - the serial number of the sub-index.

According to the accepted values of the sub-indices, the following is given. The ranking of a country among other countries in this area is determined by calculating the weighted average value of sub-indices, each of which determines the quality of digital development in its direction, by the aggregate rating of one country (3). The advantages of the proposed method are the use for convenient and unique data that allows comparison, relative ease of calculations and identification of strengths and weaknesses in each direction of the digital transformation of the country's economy.

A model for assessing the impact of the global digital economy has been developed, which is based on the country's accumulated capital ( $K(t)$ ), quality-based labour (human capital) ( $L(t)$ ) and total factor productivity ( $A(t)$ ), hybrid production growth model based on (4):

$$\text{Growth } GDP_{\text{hybrid-production}}(t) = \frac{5}{6} \text{Growth}(A(t)) + \frac{1}{2} \text{Growth}(K(t)) + \frac{1}{2} \text{Growth}(L(t)) \quad (4)$$

The main component of economic growth in the 21st century - total factor productivity (Solou's balance) is understood as an indicator of the level of  $A(t)$  -technical development, and its growth is not only technological change but also improving skills and motivation of the workforce, management methods and production.

The growth of the total factor productivity is defined as a percentage (5) of the dynamic equation depending on the country  $i$  and the differences, and convergence varies from state to state:

$$\text{Growth } A^i(t) = 1,3 + \beta^i (\ln GDP_{p.c}^{us}(t-1) - \ln GDP_{p.c}^i(t-1)) \quad (5)$$

Indicator 1.3 shows the factor productivity growth rate. The model for measuring the

convergence rate of the country  $I$  is defined as follows:  $\beta^i = \begin{cases} \frac{(-CCI^i)^{1,5}}{-800} \\ 0,015 \end{cases} + 0,015$ , if

$$CCI \leq 0, \quad (6)$$

$$\text{if } CCI \geq 0,$$

Here,  $CCI^i$  - the index of convergence conditions, which are calculated as the sum of the scales of the rating indices and shows the pace of modernization of the country. The following model is used in the digital economy to calculate it.

$$CCI^i = DEDI^i_{scal} \quad (7)$$

In implementing this above model, the factorial efficiency of introducing digital technologies is 3%. In the long run, we can predict that by 2050 this figure will be 4.5%.

## CONCLUSIONS AND SUGGESTIONS

In conclusion, it should be noted that introducing blockchain technology in various sectors of the economy has several advantages, which are reflected in:

Because of the automation of the network and full digitalisation of the process, it will be possible to control the activities of all enterprises and organisations operating within the network, to monitor their activities.

By focusing on efficiency and productivity of the network, it is possible to identify the areas in which the damage works timely.

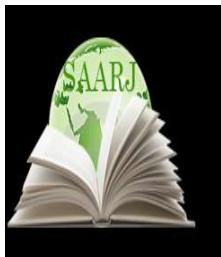
It will be possible to increase the efficiency of production and services within the network, introducing control regulations and other protocols that reduce the impact of the human factor, and increase energy efficiency, reduce energy consumption losses.

The collection, storage and analysis of sizeable amounts of data pertaining to the network will ensure the transparency of processes and laws, and the ability to make science-based forecasts for the coming period with high accuracy. In addition, implementing various levels of critical analysis using a large network of aggregated networks, high-precision forecasting of scientifically based forecasts for work with competitors in the competitive market, and mathematical analytical forecasting of all impact factors early detection of situations will allow deciding on their elimination.

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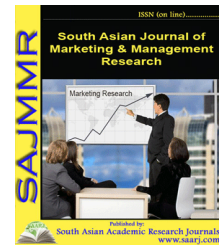
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## FREELANCE AS AN UNCONVENTIONAL FORM OF EMPLOYMENT OR NEW TRENDS IN THE MODERN LABOR MARKET

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### ABSTRACT

*The article considers the processes taking place in the modern labour market and the reasons for the emergence of the modern form of labour organization - freelance. This unconventional form of employment in the world labour market is described, freelance features and existing problems are analyzed.*

**KEYWORDS:** *Electronic Freelancer, Flexible Working Hours, Freelance, Innovative Process, Internet, Modern Labour Market.*

### INTRODUCTION

To further develop science in our country, to educate our youth with deep knowledge, high spirituality and culture, to continue working, we began to form a competitive economy and raise it to a new modern level in his Message to the Oliy Majlis President Mirziyoyev proposed to call 2020 “Ilm, ma’rifat va raqamli iqtisodiyotni rivojlantirish yili” [2] Extensive work is underway to prioritize the development and reform of the areas identified for 2020. To train highly qualified specialists for the industry, together with our foreign partners, the project “1 million programmers” was launched. Freelance is a type characterized by the independence of choice of place and form of employment in the labour market of goods and services, as well as a low degree of dependence on the employer. A freelancer engaged in this activity will have a high degree of freedom of self-realization, creative growth and self-determination. To date, this type of work does not have a clear definition and clear boundaries. By comparing freelance work with certain forms of employment, such as freelance work, remote work or remote work, self-employment, portfolio work, independent contractor, sole ownership, it can be concluded that a freelance worker cannot be included in any emerging traditional activity. Some scholars consider freelance to be non-traditional or informal employment, while others consider it to be non-governmental activity. For example, in Europe and the USA, all self-employment is included in the number of freelancers.

## MATERIALS AND METHODS

Analysis of relevant literature. In this situation, it is necessary to study freelance as the first step in private business. Freelancer engaged in this type of activity has a high degree of freedom and self-realization and also determines the order of personal work. In the Middle Ages, mercenaries (English Free lance - "free peak," freelancer - comes from the word "free spear-forming" in a modified sense means "free artist"). The word freelancer was also used by Europeans in the Middle Ages. The word was first used in fiction by V. Scott in his work "Ivengo." In the present context, the old concept has acquired new content. Today, engineers, teachers, managers, consultants, translators and others become freelance employees, finding clients on the Internet, for example, in specialized exchanges and services. They also actively use acquaintances and contacts to promote their services and find customers.

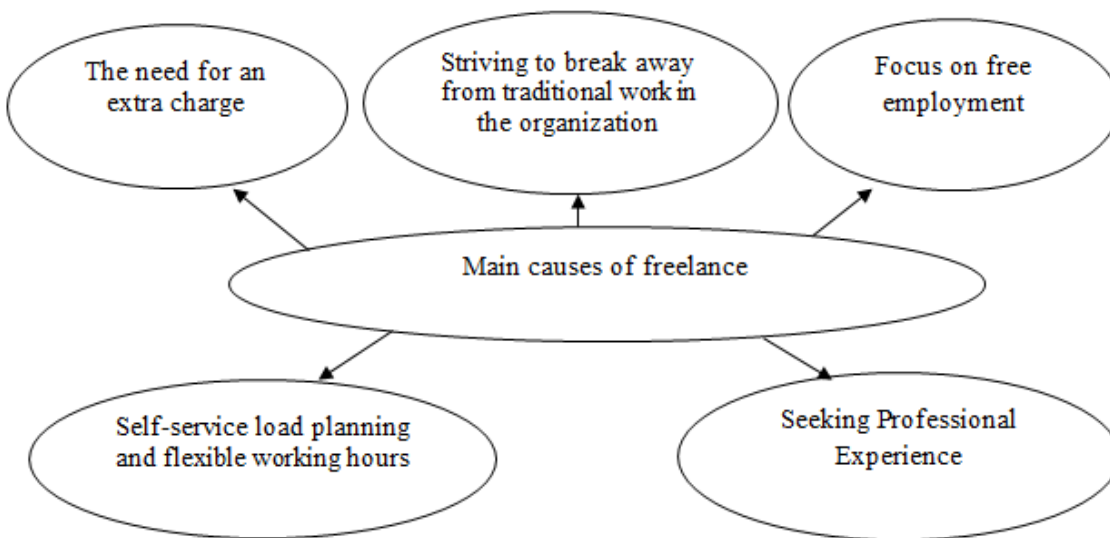
Paragraph 21 of the Decree of the President of the Republic of Uzbekistan of March 2, 2020 "On the State Program for the implementation of the Strategy for Action in the five priority areas of development of the Republic of Uzbekistan for 2017-2021 in the year of science, education and the digital economy" work remotely". [4] The theoretical foundations of freelance training were first clarified by American scientists in the mid-1970s. Telephone communication arose as a means of communication between the employer and the employee.

With the advent of the Internet, opportunities for remote workers have expanded. Jack Nilles and Frank Skif from the United States helped create the concept of telework. The first invented the concept of remote work – "telework" and presented the first experiments in the field of freelance, the second - the concept of flexiplace – "flexible workplace". However, there were many founders of the long-distance business. Among them are Jill Gordon and David Fleming, who have been promoting their ideas over the years, popularizing their work outside the office. Later, the pace of introduction of new labour organization practices developed with geometric progress. For example, in 1982, Jill Gordon, an HR consultant for Johnson & Johnson, organized the first National Television Conference in the United States. Starting in 1984, the freelance edition of Telecommunity Review began to be published [5].

During the period of the former command and control economy, the distribution of labour resources was planned, and its main task was the full employment of a growing population. Vacancies were announced in all newspapers, and unemployment was monitored. This is due to the fact that every citizen of the former union should engage in socially useful work. While engaged in socially useful work, workers received the least amount of income. But at the same time, a category of other people was formed who wanted to work more than the official salary at the expense of other jobs. Since the early 1990s, all former Soviet republics have experienced a period of development characterized by the transformation of the socio-economic sphere of society. The ongoing changes have led to a significant change in the situation in the labour market. An army of unemployed people "appeared" in state bodies, there was an absolute and relative decrease in the number of jobs in the economy, the sectoral structure of employment changed, the share of services increased, and the concept of unemployment was officially recognized. In the face of declining labour demand, freelance workers, as a non-traditional form of employment, have become the only opportunity for men and women to provide themselves with a material income and a unique alternative to traditional employment. There are objective and subjective factors that encourage workers to switch to freelance work: the socio-economic situation in the country, the employment system, the labour market and employment



requirements, on the one hand, and the satisfaction of workers with their work, on the other. The main reasons for the formation of freelancers are grouped and illustrated in Figure 1.



**Figure 1.** The main causes of freelance.

Despite the changes taking place in society, traditional methods are often used in the employment of people: they seek work from enterprises with a recorded work schedule, salary and social package. However, not everyone is satisfied with the work that the employer offers. Studies of foreign economists and sociologists show that modern developers focus on more pragmatic values and, above all, on the material side of the issue, without working on a template 8-hour working day, give priority to flexible graphic work, the ability to work at home. Today, tens of thousands of people around the world are engaged in freelance. However, there is still no strict distinction between those who consider themselves freelancers. They are usually divided into two groups. The first group includes the combination of a possible compromise-freelance with permanent work: seats, full-time employees, university students, entrepreneurs, housewives, full-time employees. Free workers are considered "pure" freelancers, such as "free artists". Freelance in the second group acts as the main occupation and the only source of income. At the end of the second millennium, there were major changes in the labour market with the emergence of new non-traditional forms of employment, new concepts, concepts of labour and employment. The liberalization of the rules governing the use of labour has made it possible to operate in accordance with the new standards. The right of everyone to work, have their own abilities, choose a profession and occupation is enshrined in the legislation of the republic. [1]

The activities of freelancers are regulated by legislation on labour and civil rights in the field of freelance employment, self-employment, individual entrepreneurship and civil law contracts. Remote or domestic labour is governed by international law, in particular, the Domestic Labour Convention 177, adopted by the International Labour Organization in Geneva in 1996. However, many scientists believe that given the need for freelance, it is necessary to develop "special legislation on freelance" to conduct civilized business.

In this case, the transactions are legal and protect both parties. "... Changes should be made that regulate the labour characteristics of remote workers.

The conclusion of an employment contract, firstly, will determine the legal status of the parties to the contracts, provide social protection for freelancers and, secondly, protect the employer from the behaviour of the employee". [6]

The concept of e-lancer – “electronic freelancer” first appeared in 1998 in an article by Thomas Malone and Robert Leibacher and was organized by analogues of e-mail - e-mail, e-business - electronic neologism. Similarly, the concept of web-lancer is “network freelancer”. [7] An electronic freelancer is a freelancer or, in other words, a freelancer who works remotely using information and communication technologies. The modern necessary set of electronic freelancers consists of the following for communicating with customers and receiving orders: Internet, computer, e-mail, ICQ, Skype, mobile phone, plastic cards or electronic wallet - Webmoney.

## RESULTS AND DISCUSSION

In the 21st century, the Internet expanded the horizons of world perception, expanding communication opportunities and changing the previous nature of the labour market. [8] Flexible labour markets have become an innovative element of the new knowledge-based economy. Remote labour markets are a manifestation of globalization and will exist outside national borders. Many people work much longer than government employees without leaving home. According to experts, they will make up most of the total number of employees in the near future. In December 2008, an online survey "Registration of the first all-Russian freelancers" was conducted, in which freelancers from 30 countries took part, and the total number of respondents amounted to 15,000 people. To date, there has been no large-scale survey of freelancers in terms of the number of respondents. In 2007, Sologig.com (Sologig. Com Freelance Survey) is a survey of 5600 freelancers and 2400 customers of companies and Global Freelancer Survey 2007 is the most popular survey of 3700 respondents from around the world. These studies show that important aspects of work for freelancers are convenient to work schedule, desire for successful work, good salary and interesting work. More and more young people with higher education are active freelancers, and their numbers are growing. The number of young specialists is growing rapidly. The direction of young people depends on how many see the freelancer as a convenient and temporary way to earn a salary and gain professional experience. If we study freelance in terms of gender, then men work more than women. In the near future, gender inequality among freelancers will gradually equalize. Electronic freelance is popular among designers, programmers, optimizers, copywriters, translators, participants in partner programs, design engineers, journalists (and other areas of text activity), computer programming and design in all its manifestations (advertising, Internet). design, interior design, etc.), translation, various consulting events, private photography and video shooting. Electronic freelancers include the IT industry: website development and support, as well as programming, advertising and many other creative professions. These studies show that important aspects of work for freelancers are convenient to work schedule, desire for successful work, good salary and interesting work. More and more young people with higher education are active freelancers, and their numbers are growing. The number of young specialists is growing rapidly. The direction of young people depends on how many see the freelancer as a convenient and temporary way to earn a salary and gain professional experience. If we study freelance in terms of gender, then men work more than women. In the near future, gender inequality among freelancers will gradually equalize. Electronic freelance is popular among designers, programmers, optimizers, copywriters,

translators, participants in partner programs, design engineers, journalists (and other areas of text activity), computer programming and design in all its manifestations (advertising, Internet). design, interior design, etc.), translation, various consulting events, private photography and video shooting. Electronic freelancers include the IT industry: website development and support, as well as programming, advertising and many other creative professions.

**TABLE 1 KEY ADVANTAGES AND DISADVANTAGES OF A FREELANCE STAFF MEMBER**

Employee Benefits	Disadvantages for the employee
Flexible working hours	Lack of career development
Ability to work from home	Instability of income
The ability to sincerely choose projects for yourself	Relatively low income
Full accountability for progress	Time of income inequality
Opportunity to accompany study or work	No legal income or the need to keep your own records and pay taxes
Diversity and irregularity of work performed	Lack of social security
Non-compliance with corporate rules	Lack of communication with colleagues
Lack of leadership and regular monitoring	Need for self-employment
Lack of communication with the workplace	High risks of deception
In a possible economic crisis, self-employment may be more stable than a permanent position in a firm or enterprise.	Work outside the office can have a negative impact on a person's psyche, that is, one of the incentives to work is a social affiliation, recognition, communication
Ability to pay an employee only for a specific project	A lot of effort must be made to set the full specification, for which it is necessary to have sufficient skills
Ability to pay a lower salary than an office worker	If the size of the documents in the task is not agreed, the results of the work can be poorly documented.
The ability not to count a freelancer as a member of a team	Even with minor changes in the project architecture, there is a risk of an increase in pre-agreed salaries and terms of reference.
Savings in a valuable office workplace	The risk of paying for a poor quality product, especially a full functional inspection, is not possible until you pay for it.
Savings on office equipment (including office equipment maintenance)	Unable to quickly use remote worker
Possibility not to have any documented employment relationship with a freelancer	If it is possible to potentially upgrade a product created in the future, there is a risk of being left untracked.
No social payments to the freelancer	Risk of not getting a result within the agreed period or not receiving it at all from the hired contractor
Among the many active freelancers, there is an opportunity for the employer to	Failure to prosecute an unscrupulous performer except simply not to pay him

successfully find the right performer	
The possibility of attracting high-class specialists from different regions.	Difficulties in controlling any employees

In order to attract more people to entrepreneurship and create additional conditions for legal employment, the adoption of the Presidential Decree "On Measures to Simplify State Regulation of Entrepreneurship and Self-Employment" also contributes to the development of work in this area. there was a huge impulse.

In particular, paragraph 4 of the decision grants the following rights to individual entrepreneurs (freelancers) who provide services (performers) through the Internet:

- acceptance of payments in foreign currency from individuals and legal entities abroad - non-residents for rendered services (performed works) to the accounts of banks of the Republic of Uzbekistan without entering the relevant information into a single electronic information system of foreign trade transactions;
- provision of services (performance of works) to foreign individuals and legal entities without concluding a contract, acceptance of a public offer (offer) of the contract or exchange of electronic correspondence or provision of invoices, including in electronic form.

Freelance is the easiest way to start making money online. Although, on the one hand, starting it does not require start-up capital, on the other hand, the constant demand for any freelancer services around the world puts the industry first in the list of jobs that generate income over the Internet. The sphere of freelancing can be understood remotely in the modern electronic labour market, by mutual agreement of economic relations between the customer (employer) and the contractor (freelancer) for a certain fee. In this case, the customer pays part-time or part-time work, and the contractor (freelancer - freelancer) performs agreed work for a certain fee. As a rule, the relationship between the freelancer and the employer is managed and regulated through a certain site (electronic labour market). But independent freelancers can also hire employers directly through their sites. The field of freelancing is so extensive that you can earn money on the Internet with almost any skill. Knowing how to write text on a computer by opening a simple Microsoft Word program will allow you to do freelance by offering text writing services in the electronic labour market. Most of our young people spend a lot of time on social networks, and they have a personal profile or pages. This means that such young people can offer free services to advertise a particular service or product. At this stage, it is natural to ask what work freelancers can do on the Internet today. In our opinion, the following 6 services are in great demand in the freelance market: writing, graphic design, programming, customer support, Internet marketing and translation.

One of the most developed countries for freelance is the United States. In the United States, 35 per cent of the population today work on freelance. Their revenue from this industry will exceed \$1 trillion in 2019. The average freelancer in the world earns about \$15-20 an hour.

Based on the results of the study, the image of an electronic freelancer can be summarized in general terms and has the following characteristics: higher education, computer and information technology, self-organization, communicability, the ability to conduct business relations, freedom from traditional labour standards and this is a person who uses his creative and professional potential to meet his needs.

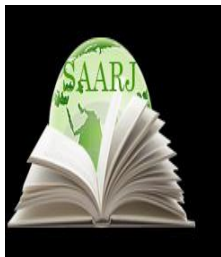
## CONCLUSION

When studying the content of freelancers as an unconventional form of employment, the following main conclusions were made:

1. By the end of the second millennium, the world labour market had undergone unprecedented changes. A new unconventional form of employment has appeared - freelance. As labour demand declines, men and women, become the only way to provide for themselves financially and are a unique alternative to traditional employment. Today, employment growth is the main priority of freelance.
2. The 21st century was a new stage in the development of freelance: innovative projects - the emergence of remote labour exchanges. Such services have become intermediaries and performers among clients. The mistake that many early labour exchanges made was to imitate western exchanges that introduced fees for freelancers to use the service.
3. There has been a slow development of legislation in this area. Given the high demand for freelance, it is advisable to develop and adopt a special law "On Freelance" for civilized business. In this case, the transactions are legal and protect both parties.
4. This type of work can lead to positive changes in life and successful integration with people with disabilities.
5. In the near future, the labour market in all countries, including Uzbekistan, will develop, and the number of freelancers will increase. Those who opted for remote work will be at the forefront of this innovative movement tomorrow.

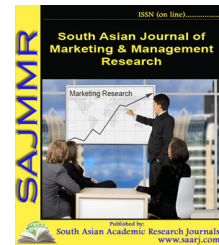
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## A STUDY ON THE JOB STRESS MANAGEMENT AMONG THE EMPLOYEES OF PUBLIC AND PRIVATE SECTOR BANK

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### ABSTRACT

*The present study enhances the job Stress level of the Public private and Sector Bank employees in thirunelveli. Empirical data has been collected for the study. This study also presents recommendations to administrators and policy makers on several Organisational Development interventions which can alleviate stress experienced by Public and private Sector Bank employees. This research shows that a large number of bankers are facing high stress because of their job and the reasons behind this stress include long working hours, improper reward system, lack of job autonomy, organizational culture, role conflict etc. and the main reason is lack of management support to employees. In methodology entails a survey of 282 public and 220 private sector employees in thirunelveli district whose responses are measured according to an occupational role stress, health stress factors, and psychological stress factors. The sample was collected through convenience sampling. On applying the t-test and ANOVA test to the data, Kruskal Wallis test to find that both public and private sector employees face moderate levels of stress. While there is no significant difference overall between public and private sector employees in terms of total stress levels, certain individual stressors such as work experience, age group, marital status, annual income and educational qualifications. The major limitation of this study is that it was conducted in thirunelveli district alone, while the work culture of organizations other than in thirunelveli district may be change.*

**KEYWORDS:** Job Stress, Public Sector, Private Sector, Annova, Kruskall Wallis Test.

## INTRODUCTION

Stress has been defined in different ways over the years. It is a condition in which any human is confronted with an opportunity or demand related to what they desire and for which the outcome is perceived to be both uncertain and important. There are number of studies and surveys have been conducted by the researchers throughout the world for suggesting improved techniques to manage stress. Stress Management is getting more and more attention now-a-days, particularly in the financial sectors. There is no such thing like stress-free job. Everyone in their work is exposed to tension and anxiety as they get through the duties assigned to them. Banking industry which is the backbone of the country's economy is not an exceptional one. The job nature of banking employees is very tedious as it involves the direct customer interaction in all levels.

### Objectives of the study

- ❖ To identify the factors of stress prevailing in different levels among the employees of public and private sector bank.
- ❖ To assess the level of agreeability of respondents in public and private sector bank towards various types of job stress.

### Limitations

- In this study opinions were obtained from 500 respondents in selected private and public sector bank.
- The co-operatives bank, foreign banks are excluded.
- The attitude of employees changes time to time.

### Source and study area

The source of data is primary data and study area comprises of thirunelveli district.

### Data collection

Data collection was conducted with help of well assigned questionnaire. The questionnaire was tested for its reliability combac's reliability coefficient. The tested questionnaire was pilot tested with 50 selected respondents from public and private sector bank.

### Tools used for the study

Chi-square, Anova, Kruskal Wallis test. All statistical test were conducted at 5% level of significance.

### Work stress

**Hypothesis: 1** There is no significant difference in the work stress between the respondents classified under the different genders.

The table 1 describes the results of annova relating to work stress factors of the respondents classified gender wise in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:1 RESULTS OF ANNOVA-GENDER AND WORK STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	6.275	6.273	0.101	0.751	NS
With in groups	486	31063.293	62.374			
Total	499	31069.568				

It is found that from the table 1 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the work stress between the respondents classified under the different gender.

### Marital Status

**Hypothesis: 2** There is no significant difference in the work stress between the respondents classified under the marital status.

The table 2 describes the results of annova relating to work stress factors of the respondents classified marital status in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE: 2 RESULTS OF ANNOVA-MARITAL STATUS AND WORK STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	1	89.840	90.480	1.460	0.227	NS
With in groups	488	30978.728	62.206			
Total	499	30069.568				

It is found that from the table 2 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the work stress between the respondents classified under the marital status.

### Age group

**Hypothesis: 3** There is no significant difference in the work stress between the respondents classified under the age group.

The table 3 describes the results of annova relating to work stress factors of the respondents classified age group in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.



**TABLE 3: RESULTS OF ANNOVA-MARITAL STATUS AGE GROUP AND WORK STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	315.518	105.153	1.696	0.167	NS
With in groups	486	30754.050	62.004			
Total	499	31069.568				

It is found that from the table 3 that hypothesis is accepted (non significant). It is concluded that there is no significant difference in the work stress between the respondents classified under the age group.

### Education

**Hypothesis: 4** There is no significant difference in the work stress between the respondents classified under the Education.

The table 4 describes the results of annova relating to work stress factors of the respondents classified Education in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:4 RESULTS OF ANNOVA- EDUCATION AND WORK STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	1	328.010	109.373	1.764	0.513	NS
With in groups	488	30471.588	61.979			
Total	499	31069.568				

It is found that from the table 2 that hypothesis is accepted (non significant). It is concluded that there is no significant difference in the work stress between the respondents classified under the Education.

### Annual income

**Hypothesis: 5** There is no significant difference in the work stress between the respondents classified under the Annual income.

The table 5 describes the results of annova relating to work stress factors of the respondents classified Annual income in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:5 RESULTS OF ANNOVA- ANNUAL INCOME AND WORK STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	193.348	64.449	1.0365	0.377	NS
With in groups	496	30876.220	62.254			
Total	499	31069.568				

It is found that from the table 5 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the work stress between the respondents classified under the Annual income.

### Experience

**Hypothesis: 6** There is no significant difference in the work stress between the respondents classified under the Experience.

The table 6 describes the results of annova relating to work stress factors of the respondents classified Experience in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE: 6 RESULTS OF ANNOVA- EXPERIENCE AND WORK STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	1	10.370	90.480	1.460	0.227	NS
With in groups	496	31053.198	62.206			
Total	499	31069.568				

It is found that from the table 6 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the work stress between the respondents classified under the Experience.

### Organizational stress factors

**Hypothesis: 7** There is no significant difference in the work stress between the respondents classified under the different genders.

The table 7 describes the results of annova relating to organizational stress factors of the respondents classified gender wise in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:7 RESULTS OF ANNOVA-GENDER AND ORGANIZATIONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	1	36.400	36.400	1.639	0.201	NS
With in groups	498	11058.472	22.206			
Total	499	11094.872				

It is found that from the table 7 that hypothesis is accepted (non significant). It is concluded that there is no significant difference in organizational stress between the respondents classified under the different gender.

### Marital Status

**Hypothesis: 8** There is no significant difference in the organizational stress between the respondents classified under the marital status.

The table 8 describes the results of annova relating to organizational stress factors of the respondents classified marital status in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:8 RESULTS OF ANNOVA-MARITAL STATUS AND ORGANIZATIONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	1	7.962	7.962	0.358	0.550	NS
With in groups	498	110896.910	22.263			
Total	499	11094.872				

It is found that from the table 8 that hypothesis is accepted (non significant). It is concluded that there is no significant difference in the organizational stress between the respondents classified under the marital status.

### Age group

**Hypothesis: 9** There is no significant difference in the organizational stress between the respondents classified under the age group.

The table 9 describes the results of annova relating to organizational stress factors of the respondents classified age group in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:9 RESULTS OF ANNOVA- AGE GROUP AND ORGANIZATIONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	106.903	35.634	1.609	0.186	NS
With in groups	496	10987.969	22.153			
Total	499	11094.872				

It is found that from the table 9 that hypothesis is accepted (non significant) .It is concluded that there is no significant difference in the organizational stress between the respondents classified under the age group.

### Education

**Hypothesis: 10** There is no significant difference in the organizational stress factors between the respondents classified under the Education.

The table 10 describes the results of annova relating to organizational stress factors of the respondents classified Education in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE: 10 RESULTS OF ANNOVA- EDUCATION AND ORGANIZATIONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	54.890	18.297	0.822	0.482	NS
With in groups	496	11039.982	22.258			
Total	499	11094.872				

It is found that from the table 10 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the organizational stress factors between the respondents classified under the Education.

### Annual income

**Hypothesis: 11**There is no significant difference in the organizational stress between the respondents classified under the Annual income.

The table 11 describes the results of annova relating to organizational stress factors of the respondents classified Annual income in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE :11 RESULTS OF ANNOVA- ANNUAL INCOME AND WORK STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	71.435	23.812	1.071	0.361	NS
With in groups	496	11023.437	22.245			
Total	499	11094.872				

It is found that from the table 11 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the organizational stress between the respondents classified under the Annual income.

### Experience

**Hypothesis: 12** There is no significant difference in the organizational stress between the respondents classified under the Experience.

The table 12 describes the results of annova relating to organizational stress factors of the respondents classified Experience in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE: 12 RESULTS OF ANNOVA- EXPERIENCE AND ORGANIZATIONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	36.687	12.229	0.549	0.649	NS
With in groups	496	11058.185	22.295			
Total	499	11094.872				

It is found that from the table 12 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the organizational stress between the respondents classified under the Experience.

### Personal stress factors

**Hypothesis: 13** There is no significant difference in the personal stress between the respondents classified under the different genders.

The table 13 describes the results of annova relating to personal stress factors of the respondents classified gender wise in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:13 RESULTS OF ANNOVA-GENDER AND PERSONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	1	3.504	3.504	0.106	0.745	NS
With in groups	498	16494.934	33.122			
Total	499	16498.438				

It is found that from the table 13 that hypothesis is accepted (non significant). It is concluded that there is no significant difference in the personal stress between the respondents classified under the different gender.

### Marital Status

**Hypothesis: 14** There is no significant difference in the personal stress between the respondents classified under the marital status.

The table 14 describes the results of annova relating to personal stress factors of the respondents classified marital status in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:14 RESULTS OF ANNOVA-MARITAL STATUS AND PERSONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	1	211.249	211.249	6.459	0.011	S
With in groups	498	16287.189	32.705			
Total	499	16498.438				

It is found that from the table 14 that hypothesis is not accepted (significant). It is concluded that there is significant difference in the personal stress between the respondents classified under the marital status.

### Age group

**Hypothesis:15** There is no significant difference in the work stress between the respondents classified under the age group.

The table 15 describes the results of annova relating to personal stress factors of the respondents classified age group in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:15 RESULTS OF ANNOVA- AGE GROUP AND PERSONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	186.482	186.482	1.931	0.124	NS
With in groups	496	17307.956	32.879			
Total	499	16498.438				

It is found that from the table 15 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the personal stress between the respondents classified under the age group.

### Education

**Hypothesis: 16** There is no significant difference in the personal stress between the respondents classified under the Education.

The table 16 describes the results of annova relating to personal stress factors of the respondents classified Education in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE: 16 RESULTS OF ANNOVA- EDUCATION AND PERSONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	22.443	49.947	1.515	0.210	NS
With in groups	496	16475.945	32.961			
Total	499	16498.438				

It is found that from the table 15 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the personal stress between the respondents classified under the Education.

### Annual income

**Hypothesis: 17** There is no significant difference in the personal stress between the respondents classified under the Annual income.

The table 17 describes the results of annova relating to personal stress factors of the respondents classified Annual income in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**Table:17 Results of Anova- Annual income and personal stress factor**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	149.841	49.947	1.515	0.210	NS
With in groups	496	16348.597	32.961			
Total	499	16498.438				

It is found that from the table 16 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the personal stress between the respondents classified under the Annual income.

### Experience

**Hypothesis: 18** There is no significant difference in the personal stress between the respondents classified under the Experience.

The table 18 describes the results of annova relating to personal stress factors of the respondents classified Experience in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE: 18 RESULTS OF ANNOVA- EXPERIENCE AND PERSONAL STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	34.086	11.362	0.342	0.795	NS
With in groups	496	16498.438	62.206			
Total	499	16498.438				

It is found that from the table 17 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the personal stress between the respondents classified under the Experience.

### Health stress factors

**Hypothesis: 19** There is no significant difference in the health stress between the respondents classified under the different genders.

The table 19 describes the results of annova relating to health stress factors of the respondents classified gender wise in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.



**TABLE:19 RESULTS OF ANNOVA-GENDER AND HEALTH STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	1	0.705	0.705	0.018	0.894	NS
With in groups	498	19556.967	39.271			
Total	499	19557.672				

It is found that from the table 19 that hypothesis is accepted (non significant). It is concluded that there is no significant difference in health stress between the respondents classified under the different gender.

### Marital Status

**Hypothesis: 20** There is no significant difference in the organizational stress between the respondents classified under the marital status.

The table 20 describes the results of annova relating to health stress factors of the respondents classified marital status in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:20 RESULTS OF ANNOVA-MARITAL STATUS AND HEALTH STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	1	27.874	27.874	0.711	0.400	NS
With in groups	498	19529.798	39.096			
Total	499	19557.672				

It is found that from the table 20 that hypothesis is accepted (non significant). It is concluded that there is no significant difference in the health stress between the respondents classified under the marital status.

### Age group

**Hypothesis: 21** There is no significant difference in the health stress between the respondents classified under the age group.

The table 21 describes the results of annova relating to health stress factors of the respondents classified age group in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:21 RESULTS OF ANNOVA- AGE GROUP AND HEALTH STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	166.120	55.373	1.416	0.237	NS
With in groups	496	19391.552	39.096			
Total	499	19557.672				

It is found that from the table 21 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the health stress between the respondents classified under the age group.

### Education

**Hypothesis: 22** There is no significant difference in the health stress factors between the respondents classified under the Education.

The table 22 describes the results of annova relating to health stress factors of the respondents classified Education in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:22 RESULTS OF ANNOVA- EDUCATION AND HEALTH STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	166.120	55.373	1.422	0.236	NS
With in groups	496	19390.899	39.095			
Total	499	19557.672				

It is found that from the table 22 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the stress factors health between the respondents classified under the Education.

### Annual income

**Hypothesis: 23** There is no significant difference in the organizational stress between the respondents classified under the Annual income.

The table 23 describes the results of annova relating to health stress factors of the respondents classified Annual income in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE:23 RESULTS OF ANNOVA- ANNUAL INCOME AND HEALTH STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	253.632	84.544	2.172	0.090	NS
With in groups	496	19304.040	38.919			
Total	499	19557.672				

It is found that from the table 23 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the health stress between the respondents classified under the Annual income.

### Experience

**Hypothesis: 24** There is no significant difference in the health stress between the respondents classified under the Experience.

The table 24 describes the results of annova relating to health stress factors of the respondents classified Experience in terms of source, degrees of freedom, sum of square, mean sum of square, F value, P value and its significance.

**TABLE: 24 RESULTS OF ANNOVA- EXPERIENCE AND HEALTH STRESS FACTOR**

Source	Degree of freedom	Sum of square	Mean of square	F value	P value	Sig./Non sig.
Between of groups	3	89.260	29.753	0.758	0.518	NS
With in groups	496	19468.412	39.251			
Total	499	19557.672				

It is found that from the table 24 that hypothesis is accepted (non significant).It is concluded that there is no significant difference in the health stress between the respondents classified under the Experience.

### KRUSKAL WALLIS TEST

#### Hobbies:

The table 25 describes priority of the respondents based on the hobbies, the different hobbies considered for the study are exercise, meditation, shopping, watching T.V& movies, excursion or picnic & others (reading, listening music...) based on the consolidated opinion of the respondents of average rank is calculated and the final rank is also fixed using the criteria lesser than the average rank is more than priority

**TABLE: 25 AVERAGE HOBBIES**

Hobbies	R1	R2	R3	R4	R5	R6	Total	Avg. Rank	Final Rank
Exercise	15	101	97	99	63	45	420	3.55	5
Meditation	19	30	110	82	82	26	359	3.71	6
Shopping	30	89	85	116	19	11	341	3.19	4
Watching T.V/movies	315	85	33	14	7	2	450	1.53	1
Excursion/Picnic	77	73	86	30	88	24	376	3.14	3
Others(reading,listening music)	53	128	45	30	11	18	253	2.87	2

It is found from table 25 out of the respondents 315 rank provided 1 for watching T.V or movies followed by 77 for exercise or picnic and so on in reducing the stress. Further 101, 128 & 89 respondents have given rank 2 respectively for exercise, others(reading, listening music...) & shopping in reducing the stress. It is also found based on the consolidated opinion of the respondents are given the top priority for watching T.V& Movies followed by others stress reducing hobbies such as reading, listening music..

It is concluded that 315 of respondents have given up priority of craziness for watching T.V & movies among various hobbies in reducing the stress.

The Kruskal Wallis test is a non-parametric test used to test whether there exist significance difference between the different categories of respondents on their priorities towards various aspects. In this section results of kruskall Wallis test used to test whether there exist significance difference between the respondents on the priorities towards hobbies they use for managing the stress. The test has carried out with suitable hypothesis and relevant interpretation.

In this section, the results of Kruskal wallis test is presented in testing the hypothesis whether there exist significance difference between the different categories of significant respondents on the priorities towards their hobbies. The results of presented for each personal and socio-economic factors separately with suitable hypothesis and relevant interpretations.

### Gender

Ho: There is no significant difference between the respondents of different gender on priorities towards their hobbies:

**Table: 26 RESULTS OF KRUSKAL WALLIS TEST- GENDER AND HOBBIES**

Hobbies	Chi-square value	P value	Sig./Non sig.
Exercise	0.151	0.698	NS
Meditation	0.163	0.687	NS
Shopping	15.667	0.000	S
Watching T.V/movies	0.000	0.996	NS
Excursion/Picnic	0.183	0.669	NS
Others(reading,listening music)	0.890	0.003	S

It is found that from the table 26 that hypothesis is rejected(sig) and in other cases the hypothesis is accepted(non sig).It is concluded that there exists significant difference between the respondents of difference genders on the priorities towards their hobbies such as shopping and other hobbies (reading, listening music,.)

**Table:27RESULTS OF KRUSKAL WALLIS TEST- MARITAL STATUS AND HOBBIES**

Hobbies	Chi-square value	P value	Sig./Non sig.
Exercise	0.326	0.071	NS
Meditation	1.600	0.001	S
Shopping	0.001	0.973	NS
Watching T.V/movies	0.261	0.609	NS
Excursion/Picnic	0.259	0.972	NS
Others(reading,listening music)	0.259	6.11	S

It is found that from the table 27 that hypothesis is rejected(sig) and and in other cases the hypothesis is accepted(non sig). It is concluded that there exists significant difference between the respondents of difference genders on the priorities towards their hobbies such as shopping and other hobbies (reading, listening music,.)

**Table:28 RESULTS OF KRUSKAL WALLIS TEST- AGE GROUP AND HOBBIES**

Hobbies	Chi-square value	P value	Sig./Non sig.
Exercise	0.302	0.960	NS
Meditation	7.313	0.063	NS
Shopping	3.102	0.376	NS
Watching T.V/movies	2.791	0.425	NS
Excursion/Picnic	6.965	0.073	NS
Others(reading,listening music)	5.449	0.132	NS

It is found that from the table 28 that the hypothesis is accepted(non sig) in all the cases.

**TABLE: 29 RESULTS OF KRUSKAL WALLIS TEST EDUCATION AND HOBBIES**

Hobbies	Chi-square value	P value	Sig./Non sig.
Exercise	12.053	0.007	S
Meditation	5.388	0.145	NS
Shopping	5.363	0.147	NS
Watching T.V/movies	10.607	0.014	S

Excursion/Picnic	2.032	0.566	NS
Others(reading, listening music)	9.602	0.022	S

It is found that from the table 29 that hypothesis is rejected (sig) and in other cases the hypothesis is accepted(non sig). It is concluded that there exists significant difference between the respondents of difference hobbies on the priorities towards such as exercise, shopping and other hobbies (reading, listening music,)

**Table:30 RESULTS OF KRUSKAL WALLIS TEST ANNUAL INCOME AND HOBBIES**

Hobbies	Chi-square value	P value	Sig./Non sig.
Exercise	3.205	0.361	NS
Meditation	3.970	0.265	NS
Shopping	3.529	0.317	NS
Watching T.V/movies	1.146	0.766	NS
Excursion/Picnic	8.141	0.043	S
Others(reading, listening music)	6.519	0.089	NS

It is found that from the table 30 that hypothesis is rejected (sig) and in other cases the hypothesis is accepted(non sig). It is concluded that there exists significant difference between the respondents of difference genders on the priorities towards their hobbies such as excursion.

**Table: 31 RESULTS OF KRUSKAL WALLIS TEST EXERCISE AND HOBBIES**

Hobbies	Chi-square value	P value	Sig./Non sig.
Exercise	5.358	0.342	NS
Meditation	4.956	0.175	NS
Shopping	6.711	0.082	NS
Watching T.V/movies	8.320	0.040	S
Excursion/Picnic	2.070	0.558	NS
Others(reading, listening music)	9.977	0.019	S

It is found that from the table 31 that hypothesis is rejected (sig) in two cases and in other cases the hypothesis is accepted (non.sig) It is concluded that there exists significant difference between the respondents of difference genders on the priorities towards their hobbies such as watching T.V and other hobbies (reading, listening music.)

## FINDINGS AND SUGGESTIONS

Factors of stress prevailing in different levels among the employees of public and private sector banks. Results obtained by application of Anova.

**WORK STRESS FACTOR:**

- ✓ There is no significant difference in work stress factors between respondents classified under different gender.
- ✓ There is no significant difference in work stress factors between respondents classified under different marital status.
- ✓ There is no significant difference in work stress factors between respondents classified under different age group.
- ✓ There is no significant difference in work stress factors between respondents classified under different education.
- ✓ There is no significant difference in work stress factors between respondents classified under different annual income.
- ✓ There is no significant difference in work stress factors between respondents classified under different experience.

**ORGANIZATIONAL STRESS FACTORS:**

- ✓ There is no significant difference in organizational stress factors between respondents classified under different gender.
- ✓ There is no significant difference in organizational stress factors between respondents classified under different marital status.
- ✓ There is no significant difference in organizational stress factors between respondents classified under different age group.
- ✓ There is no significant difference in organizational stress factors between respondents classified under different education.
- ✓ There is no significant difference in organizational stress factors between respondents classified under different annual income.
- ✓ There is no significant difference in organizational stress factors between respondents classified under different experience.

**PERSONAL STRESS FACTORS:**

- ✓ There is no significant difference in personal stress factors between respondents classified under different gender.
- ✓ There is no significant difference in personal stress factors between respondents classified under different marital status.
- ✓ There is no significant difference in personal stress factors between respondents classified under different age group.
- ✓ There is no significant difference in personal stress factors between respondents classified under different education.
- ✓ There is no significant difference in personal stress factors between respondents classified under different annual income.
- ✓ There is no significant difference in personal stress factors between respondents classified under different experience.

**HEALTH STRESS FACTORS:**

- ✓ There is no significant difference in health stress factors between respondents classified under different gender.

- ✓ There is no significant difference in health stress factors between respondents classified under different marital status.
- ✓ There is no significant difference in health stress factors between respondents classified under different age group.
- ✓ There is no significant difference in health stress factors between respondents classified under different education.
- ✓ There is no significant difference in health stress factors between respondents classified under different annual income.
- ✓ There is no significant difference in health stress factors between respondents classified under different experience.

**Assessing the importance shown by public and private sector bank to reduce the job stress among their employees. Results showed by the application of Kruskal Wallis Test.**

- ✓ The 315 of the respondents have given top priorities of craziness for watching T.V and movies among the various hobbies in reducing the stress.
- ✓ There exist significant difference between the respondents of different gender on the priorities their hobbies such as shopping and other hobbies (reading, listening music,.)
- ✓ There exist significant difference between the respondents of different marital status on the priorities their hobbies towards such as mediation.
- ✓ There exist significant difference between the respondents of different gender on the priorities their hobbies towards such as exercise, watching T.V & others (listening music, reading)
- ✓ There exist significant difference between the respondents of different gender on the priorities their hobbies towards such as excursion.
- ✓ There exist significant difference between the respondents of different gender on the priorities their hobbies such as watching T.V, movies. Others (listening music, reading).

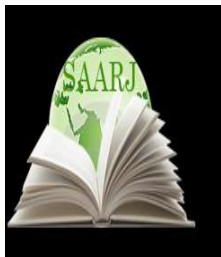
**CONCLUSION**

The present condition of the employees is conducive and it helps to enrich the coping behavior of employees of uplift the organization. If all the suggestions are properly caused out by the employee of bank that the stress level of the employee will definitely come down which may result organization growth and will create a healthy organization climate. This research shows that a large number of bankers are facing high stress because of their job and the reasons behind this stress include long working hours, improper reward system, lack of job autonomy, organizational culture, role conflict etc and the main reason is lack of management support to employees. The employees can notice a number of symptoms indicating high level stress among them. However if these symptoms are not noticed in early stage, they can cause serious health problems among employees such as depression, heart problems, diabetes etc. Not only health but personal life of bankers are also being affected because of high job stress, most employees are unable to spend time at home or with family. However, with the help of proper management techniques by management, the bankers stress level can be reduced to great extent.

**REFERENCE:**

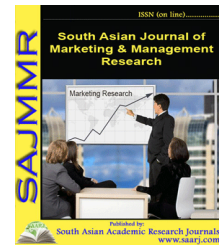
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## ISSUES OF MODELING THE PERSPECTIVE DEVELOPMENT OF CATTLE BREEDING

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### ABSTRACT

*Article aims to develop information-logic mechanism and forward-looking development of cattle breeding production, allowing revealing reserves of growth of production of meat and dairy products. In this paper we proposed and implemented a methodical approach to the prediction based on the model tion of perspective development of cattle breeding in the farms. These models take into account the conditions for the implementation of the principle of phased breed conversion of the herd by methods of breeding and purchase of pedigree cattle in order to increase the production and consumption of livestock products per capita. According to the results of the study, relevant forward-looking recommendations and suggestions for decision makers have been prepared.*

**KEYWORDS:** *Theagegroup, Herds Of Cattle, Livestock Productivity, Ext Morning Nij Factor Herd Turnover.*

### INTRODUCTION

One of the main tasks in solving the food problem is the implementation of drastic measures to balance feeds, improve pedigree and productive qualities of cattle and other organizational and economic measures leading to an increase in livestock production. Justification of these measures requires a large amount of computational work. In this case, the indicators of the case plan are first calculated and the possible income of the offspring population in the context of individual livestock breeds is determined. Then, taking into account the need for consistent and

phased improvement of the breed composition of the herd, the herd of livestock is calculated taking into account their purchase in the context of specific breeds and age and gender groups.

Based on the forecast of livestock productivity and the results of the calculation of the herd turnover, the volumes of meat and milk, meat and dairy products are calculated. Moreover, if the calculation results do not satisfy the decision maker, then he repeats the calculation with a qualitatively new source information.

Obviously, there can be many options for the prospective development of livestock production. As a result, the problem arises of choosing from all possible options the most effective one that fully meets the given conditions and requirements for the intensive development of meat and dairy herds.

An effective solution to these problems requires the development and application of appropriate tools for the prospective development of public cattle breeding at various hierarchical levels of management. One of the rational tools for solving this problem are the methods of mathematical modeling of the prospective development of livestock production. Carrying out multivariate calculations on a PC using the models of the above tasks allows us to identify reserves for increasing the production of meat, dairy and other types of livestock products.

A lot of works have been devoted to solving the problems of developing livestock production [2, 3, 4]. However, modeling problems of the perspective development of livestock husbandry, taking into account the production and economic conditions of farms and regions of the Republic of Uzbekistan, are covered in only a few works [5, 16].

Within the framework of one monograph, a detailed analysis of each of these works seems impossible. Therefore, depending on the directions of the problems considered in a particular work, we will divide them into three groups:

- 1) Modeling the development of livestock industries at the regional level;
- 2) Development of models and algorithms for forecasting livestock production at the farm level;
- 3) Modeling of individual technological processes of livestock rearing.

The first group includes works [3, 8, 9, 14, 18], the second group includes works [2, 5, 11], and finally, the third group should include scientific works [6, 7, 10, 12, 13, 15, 17, 19, 20].

In [6], existing forms of using genetic-mathematical methods and computers for optimizing livestock breeding programs are described. As is known, due to biological features and technological processes, the receipt of the final product in a multi-level hierarchy of livestock production management in general, and cattle breeding in particular, is different from each other. In this regard, in this work, the main tasks of automation of production are identified. The basic operations of the information and control function are given. The classification of the automated control system (ACS) of the technological processes of livestock complexes. The procedure for automated data processing on a herd and selection of cows is described.

In [14], the optimization of structural changes in a productive subcomplex is considered using the example of meat and dairy specialization in the system of regional agro-industrial industrial complex (AIC). Further, it is noted that focusing on economic methods requires a different approach to technological forecasting. It is noted that the study of objective trends in the

technological orientation of production lies at the heart of decision-making on improving technology and limiting deadlock areas of development, in particular those associated with the use of predominantly unproductive resources. Focusing on relative efficiency, the author notes that it is not the actual, but the necessary level of costs that is taken into account. In conditions of low prices for goods, they can become the main cause of the shortage and, of course, the high value of the resource. It is emphasized that in the production of milk the most significant impact was the lack of labor resources. As noted in the work, this was mainly due to a reduction in labor resources due to the low price of food in the city, as well as due to the lag in the social sphere of the village. We study direct labor costs for production of 1 quintal of milk and other major economic indicators of milk production technology in the public sector agricultural Russian Federation.

The guidelines [7] set out the basic principles of organization of pedigree accounting in dairy cattle breeding using computer technology. The work describes in more detail the technology for processing information documents on the appraisal of cows and young animals, the compilation of a consolidated statement of this indicator in the context of farm groups. At the same time, the procedure for processing data on artificial insemination, evaluation of bulls by offspring, etc.

In [13], the possibilities of using computers in the development of theory and practice of breeding in various branches of animal husbandry, including livestock, are examined. A comparative assessment of dairy cattle breeding in the USA, Canada and some other countries is studied and carried out taking into account the urgent problems of perspective development on the basis of the most rational systems of breeding, feeding, organization and keeping of animals on dairy farms. Further, the experience and results of intensive cultivation of calves of different breeds and crossbreeds on diets of a concentrate type were studied. The work emphasizes that computer technology is used to optimize feeding, size and structure of the herd, determine the criteria for culling livestock, etc.

In [3], techniques and methods for predicting livestock production in the economy for the short term were developed. The main ways and methods of increasing production based on the intensification, concentration, specialization and inter-farm cooperation of animal husbandry are characterized. The role and importance of forecasts in the processes of operational management in the conditions of ACS are revealed. A hypothesis is formulated for constructing a model for pronating animal productivity. It is emphasized that the productivity of animals is due to the influence of many factors of external influence and internal biological characteristics that interact with various combinations and directions of formation of effective indicators of animal productivity. Therefore, the authors emphasize that before the economic science is to develop improved methods of study show as the lei productivity using regression analysis techniques. At the same time, the authors influencing this indicator by the authors are divided into three blocks: 1) a block of factors of feed means; 2) a block of breeding factors; 3) a block of economic factors.

Three types of relationships between the relocants of the animal organism and environmental factors are proposed. According to the author, all of these types of relationships should be strictly taken into account in the mathematical formalization the cybernetic model "animal - the environment". The analysis of the use of Markov chains in predicting the structural types of farms is carried out. The author emphasizes that the Markov chain method is best applied where the movement of each individual unit is recorded and where these movements are a reaction to

successively and uniformly acting forces. The following are models commonly used in the United States: the Wharton-Efu model; OBE model; Brookings model; model 63-D.

At the same time, this monograph proposes a method of selecting a method for short-term forecasting of the production and sale of livestock products. As possible methods are proposed: the method of production functions or multivariate correlation and regression analysis; extrapolation method; expert assessment method; a method of simulating dynamic processes. According to the author, using the third method, forecasting livestock production is carried out in three stages: 1) development of a technological model; 2) development of a cybernetic model; 3) development of a mathematical model.

In [19], a dynamic incentive model of development at the level of agricultural enterprises was proposed. The main tendency of its development, according to the authors, should be the consistent intensification and transfer of production to industrial methods. As a rule, these processes fully relate to livestock industries, especially where large agro-industrial complexes are created for milk production, for growing and fattening young cattle, etc. The necessity of improving organizational forms and methods of managing livestock complexes is justified in order to ensure more a real high level of livestock concentration, the dynamics of changes in its state of the obligation to maintain the rhythm of livestock production actions.

The study included in this work was carried out jointly with Czech experts and was called the method of modeling dynamic systems (MODS) [7]. This method performs two main functions related to the construction of a dynamic stimulative model and the calculation of the development parameters of the simulated system. This method is used in cases where it is possible to establish an empirical quantitative relationship between the elements of the system. At the same time, the MODS method imitates both the direct development of the system and the “reverse” stroke. In the first case, the development from the initial state to any number of time intervals in the future is studied, in the second case, from the desired final state of the system to the necessary state at the current time.

Using the proposed method and model, it is possible to determine the effect of changes in individual relationships of elements for analysis on the final results of production.

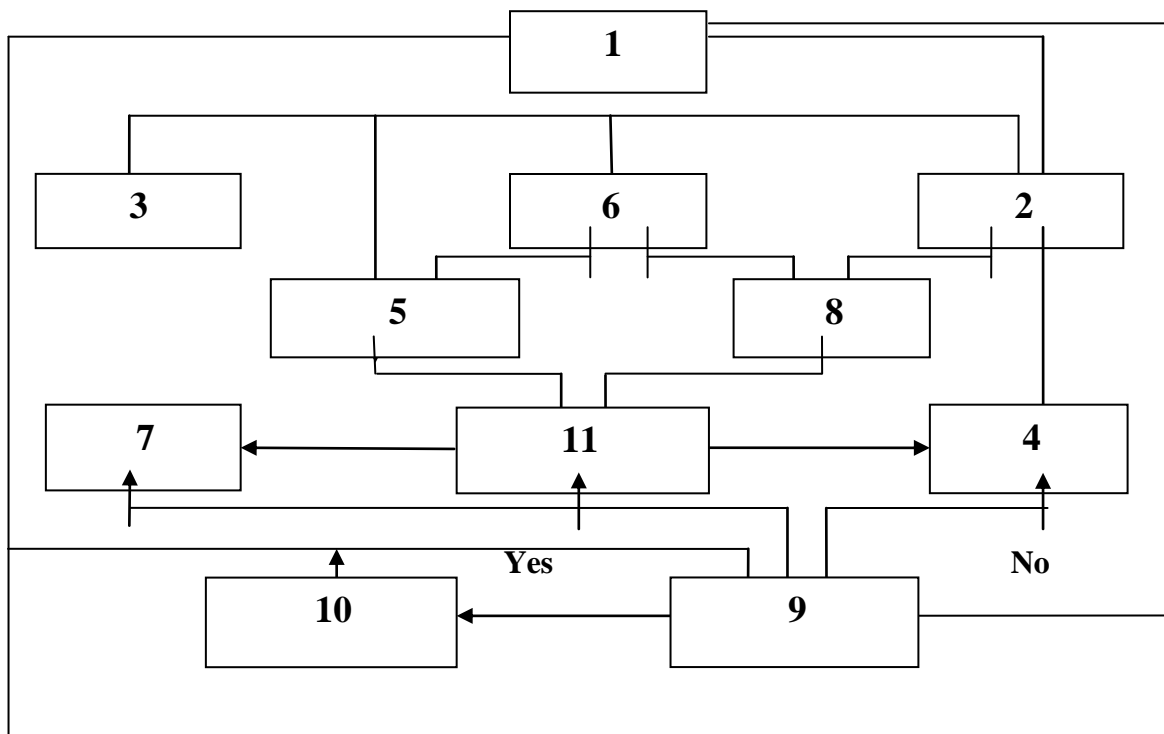
The scientific work [16] revealed the features of the production program for livestock in agricultural enterprises and identified the main directions for improving the economic mechanism for the development of livestock. The analysis is carried out and the basic model of insemination of the brood stock and offspring, reproduction of the herd of animals is developed. The decision-making technology in the automation of the development of a livestock production program is substantiated and the results of the method, models and algorithms implementation are analyzed.

The book [10] explores the development of animal husbandry, which covers the task of determining the optimal structure of the herd at various rates of expanded reproduction, taking into account specialization and limited resources. The necessity of solving livestock problems by methods of mathematical modeling, development and research of the optimal version of the results of problem solving is substantiated. Formulated two formulations of the problem of optimizing the structure and quarterly turnover of the herd of cattle at the company - shareholders inter-farm association, providing for maximizing the number of cattle supplied parent enterprise the.

Based on the study of the above scientific works and taking into account the positive aspects that make it possible to determine effective directions for the development of livestock breeding, the absence of work on modeling the development of livestock breeding based on the introduction of new forms of labor stimulation, improved feed availability, and the use of breeding methods using reproductive and parallel methods is revealed-absorption, purchase of pedigree cattle, etc.

All this, when using other measures, determines the basis for intensifying the efficiency of livestock production. At the same time, the meaning and content of transitional processes consists in a radical turn of the activities of subjects of public cattle breeding to meet the needs of the population in meat and dairy products. In resolving issues of the prospective development of livestock breeding, the prevailing level of specialization and the production conditions of the object of study are studied. Based on an economic analysis of the processes of production and sales of meat and dairy cattle breeding, we have identified a system of economic and mathematical problems [1]. Based on the principle of information and logical connection and the structure of the system of tasks, we have developed an enlarged scheme for their implementation on a PC (Fig. 1). In this case, on the basis of the implementation of the algorithm for calculating the plan of cases, the number of offspring entering the herd is determined. The latter, together with the number of livestock purchased, is used as an input for the implementation of an economic-mathematical model for optimizing the herd turnover for livestock breeds.

When implementing the balance model of production and use of feed. The results of solving the herd turnover problem are taken into account. Differentiated standards and patterns of feed costs for each livestock breed. Based on a comprehensive account of the influence of the main factors (costs and labor costs, feed supply, etc.), livestock productivity forecast by breed groups is made, in turn, it is used in the implementation of the economic and mathematical model for forecasting production and sales of products in the economy. This model is directly related to the economic-mathematical model of the same problem, solved at the regional level. At the same time, at this level, the structure of production and sales, the demand and consumption indices of meat and dairy products are determined. After reaching a balance on all indicators, the decision maker (DM) makes a comparative assessment of the consequences of decisions on alternative options. If not one of the alternative options satisfies the decision-maker in terms of socio-economic knowledge, then it re-contacts the database and implements models with a qualitatively new array of information. He will repeat this procedure until a satisfactory calculation is achieved. The structure of the database provides the ability to reflect all the necessary data, taking into account the zoo-economic conditions and the content of each livestock in the farm.



**Fig. 1. The mechanism for assessing the prospective development of livestock production**

The following notation is used in the figure: 1 - decision maker (DM); 2 - database; 3 - a set of algorithms for the tasks of analyzing historical data on the development of livestock; 4 - balance model of production and use of feed; 5 - economic-mathematical model of the turnover of a herd of cattle, taking into account the factor of pedigree; 6 is an algorithm for calculating a plan for cattle incidents and offspring; 7 - economic-mathematical model for forecasting livestock production in the region; 8 is a model for predicting livestock productivity by breed groups; 9 - checking the balance and acceptability of the results; 10 - model results for analysis and assessment of the consequences of decisions; 11 - economic-mathematical model for forecasting the needs, production and sales of livestock products in the economy.

In general, the results of the analysis of the retrospective of livestock production for various production types of farms show that the development and implementation of economic and mathematical models in them are of fundamental importance. In this regard, there is great interest in the economic and mathematical modeling of the promising development of the livestock industry, taking into account the breed transformation of cattle herds in a two-tier system " economy - region ". To implement these tasks, a system of economic-mathematical models and algorithms for the promising development of livestock breeding should be developed on a personal computer.

## CONCLUSIONS

1. Based on the study of scientific papers, and taking into account existing in their positive aspects, allowing determining the effective livestock development direction, improve fodder security, the use of the breeding methods of breeding species methods of reproductive and parallel-absorbing cross, the purchase of breeding stock, and others. In addressing the long-term

development of animal husbandry are studied prevailing level of specialization and production conditions of the object of study. Based on an economic analysis of the processes of production and sales of meat and dairy cattle breeding, we have identified a system of economic and mathematical problems. Based on the principle of information and logical connection and the structure of the system of tasks, we have developed an enlarged scheme for their implementation on a PC.

2. The developed model is directly related to the economic and mathematical model of the same problem, solved at the regional level. At the same time, at this level, the structure of production and sales, the demand and consumption indices of meat and dairy products are determined. After achieving a balance in all indicators, the decision-maker makes a comparative assessment of the consequences of decisions on alternative options. If not one of the alternative options satisfies the decision-maker in terms of socio-economic knowledge, then it re-contacts the database and implements models with a qualitatively new array of information. He will repeat this procedure until a satisfactory calculation is achieved. The structure of the database provides the ability to reflect all the necessary data, taking into account the zoo-economic conditions and the content of each livestock in the farm.

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